ORDER NO. KMS9809311C1
F5

# Service Manual

DIGITAL PROPRIETARY TELEPHONE
FOR DIGITAL SUPER HYBRID SYSTEM

# KX-T7433C

White Version

# KX-T7433C-B

Black Version

(for Canada)

## ■ SPECIFICATIONS

| | |
|---|---|
| Station Loop Limit: | 40 ohms |
| Cabling Method: | 2 pair wire |
| Jacks: | Main unit, Handset/Headset, Telephone |
| Display: | 16 digits (max.) |
| Dimensions: | 208 (W)×105 (H)×232 (D) mm with handset |
| Weight: | 1.03 kg |

Design and specifications are subject to change without notice.

**⚠ WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians.
Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

When you note the serial number, write down all of the 11 digits. The serial number may be found on the label affixed to the bottom of the unit.

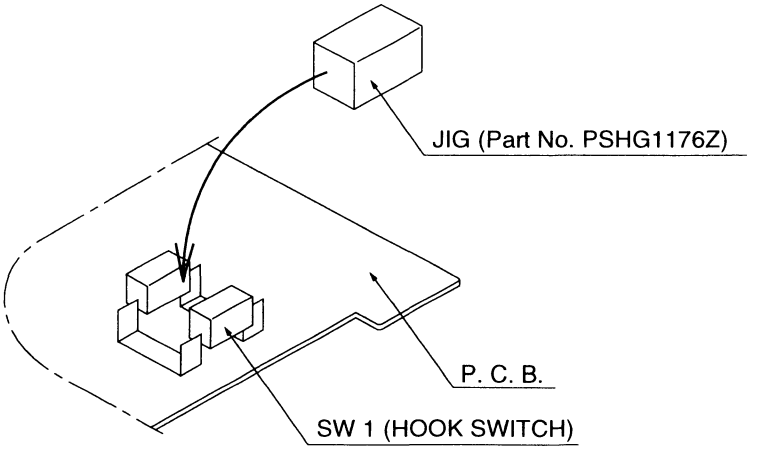
# TABLE OF CONTENTS



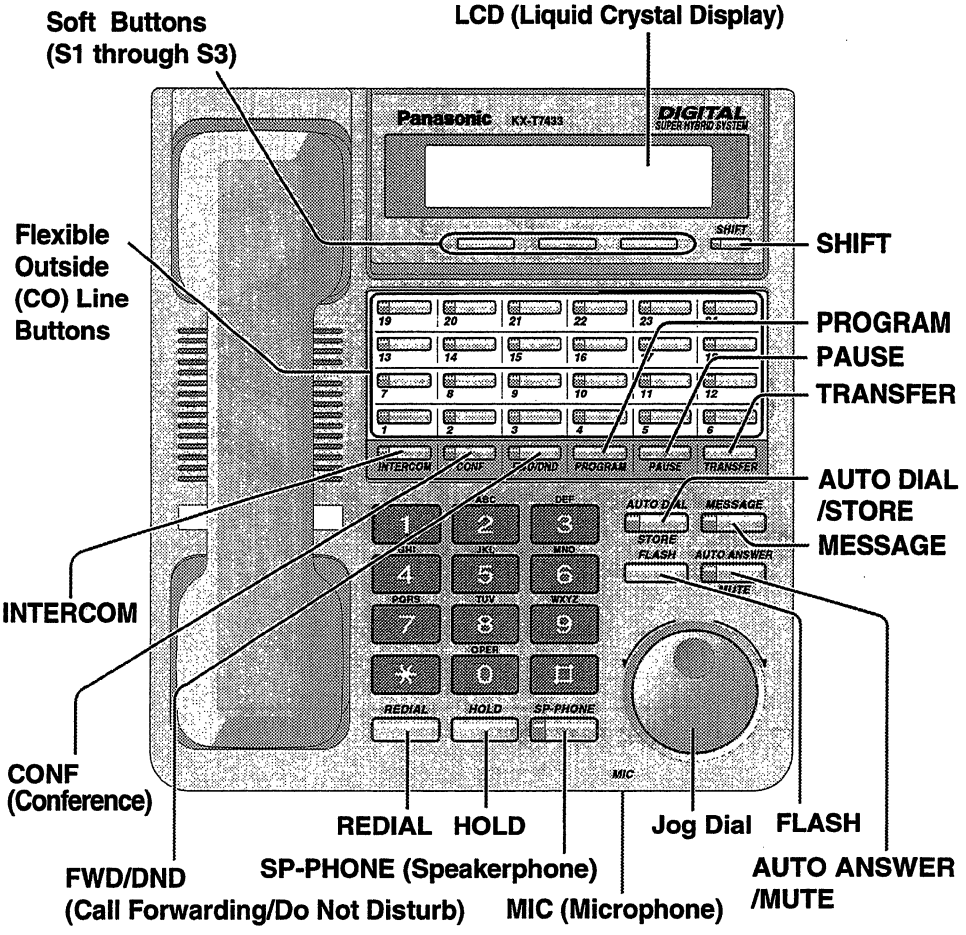
# FOR SERVICE TECHNICIANS

1. Note the following items when exchanging the LEDs (Ref. No. D100-130, D201) of Dial P.C. Board.
   1) Do not reuse a LED which is removed from the P.C. Board.
   2) Use a soldering iron (less than 15 W) for exchanging LED.
   3) Do not heat the LED for more than 2 seconds.
   4) Do not move the LED after soldering.

2. This unit employs the switch which is influenced by the light for the hook switch. When you open the cabinet to repair the unit in the bright light, the hook switch might work improperly. Therefore, take care not to shine the hook switch directly, or use the jig as shown below.



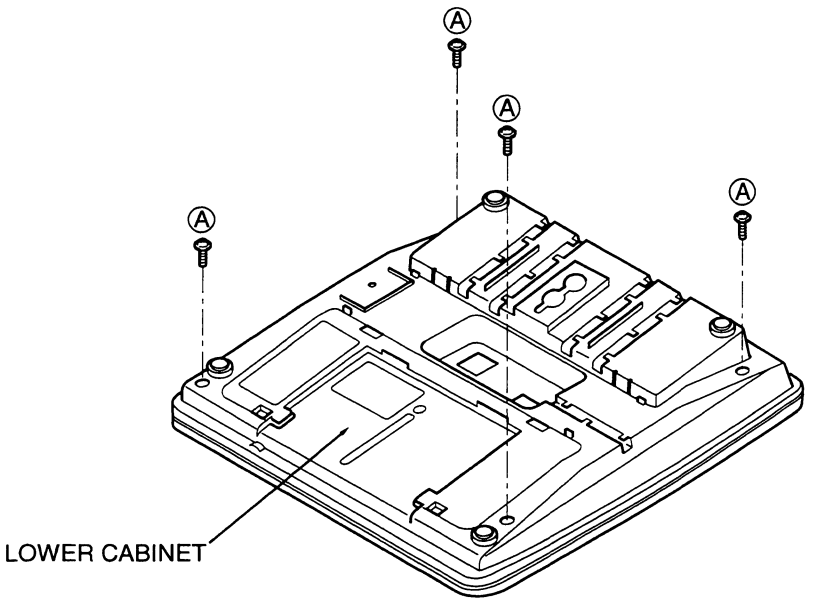
# LOCATION OF CONTROLS



# DISASSEMBLY INSTRUCTIONS

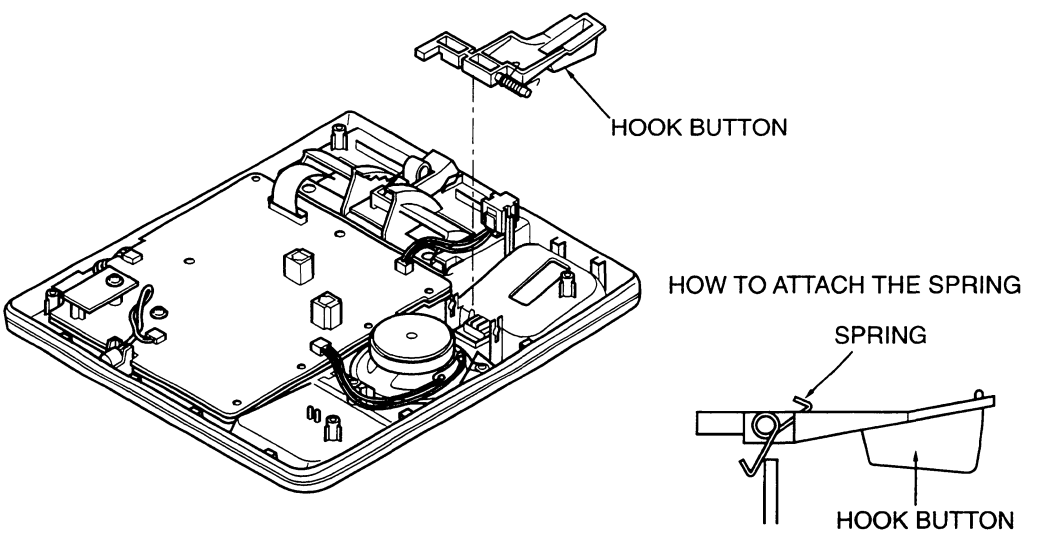
| No. 1 | **HOW TO REMOVE THE LOVER CABINET** |
|---|---|
| Procedure 1 | |

1) Remove the 4 screws Ⓐ.
2) Remove the lower cabinet.




| No. 2 | **HOW TO REMOVE THE HOOK BUTTON** |
|---|---|
| Procedure 1→2 | |

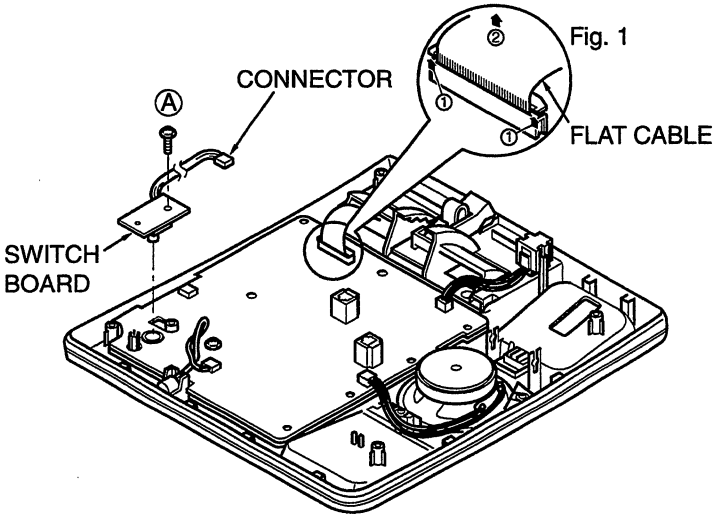
1) Remove the hook button.

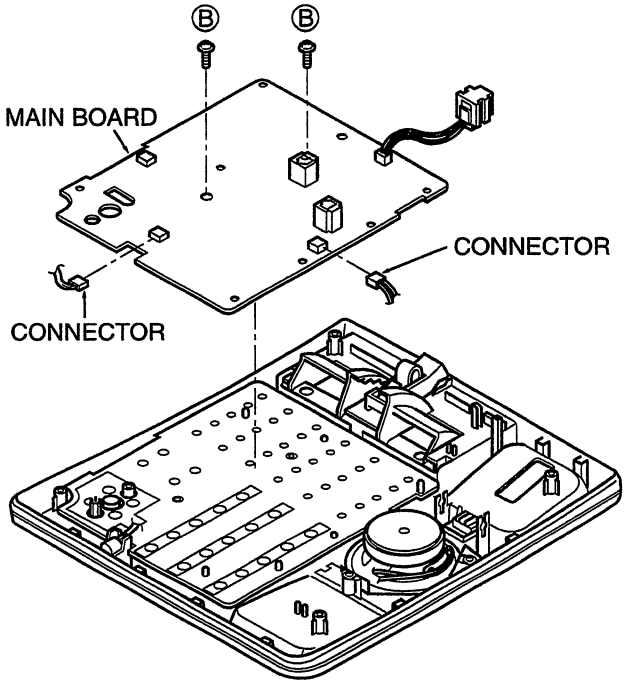


| No. 3 | HOW TO REMOVE THE SWITCH AND MAIN BOARDS |
|---|---|

Procedure
1→2→3

1) Remove the screwⒶ.
2) Pull out the switch board connector.
3) Remove the switch board.
4) Pull out the flat cable. (See Fig. 1)
5) Remove the 2 screwsⒷ.
6) Pull out the speaker and microphone connectors.
7) Remove the main board.

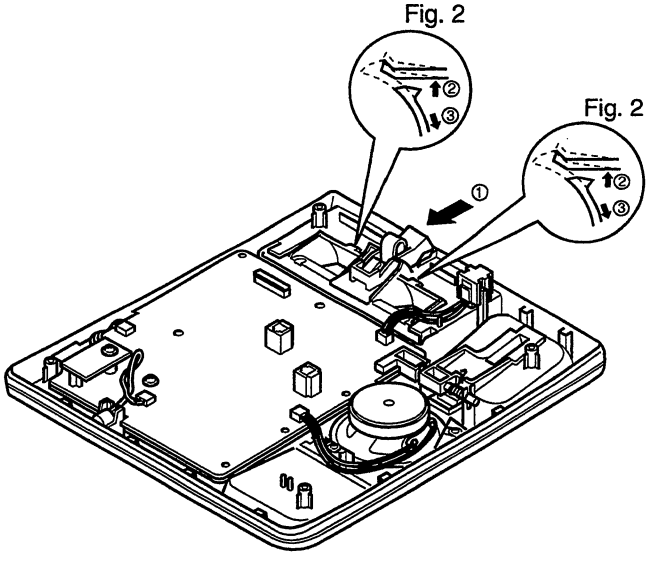


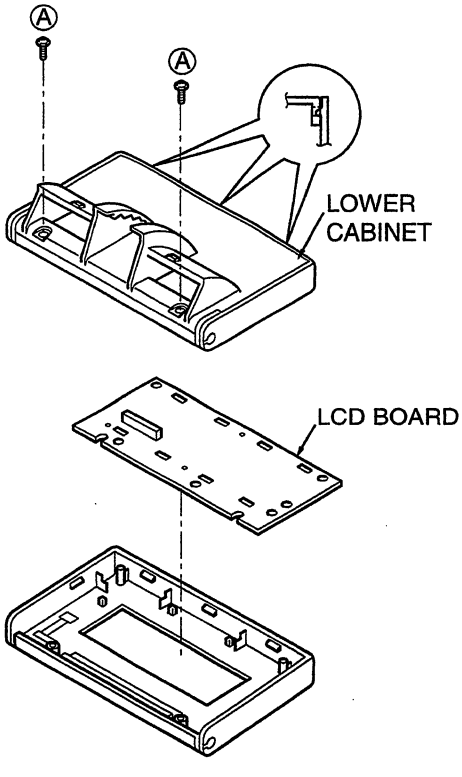




| No. 4 | HOW TO REMOVE THE LCD BOARD |
|---|---|

Procedure
1→4

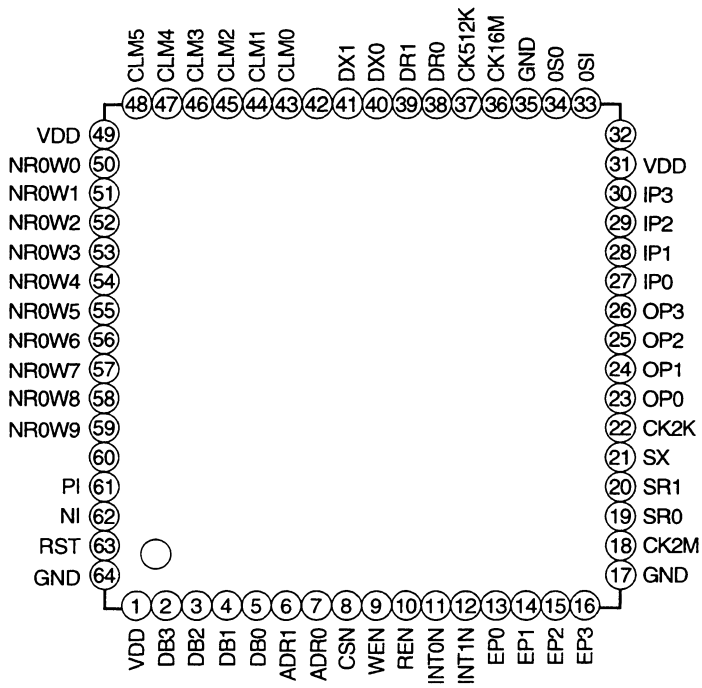
1) Pull out the flat cable. (See Fig. 1)
2) Remove the LCD block. (See Fig.2)
3) Remove the 2 screws Ⓐ.
4) Remove the lower cabinet.
5) Remove the LCD board.



# IC DATA

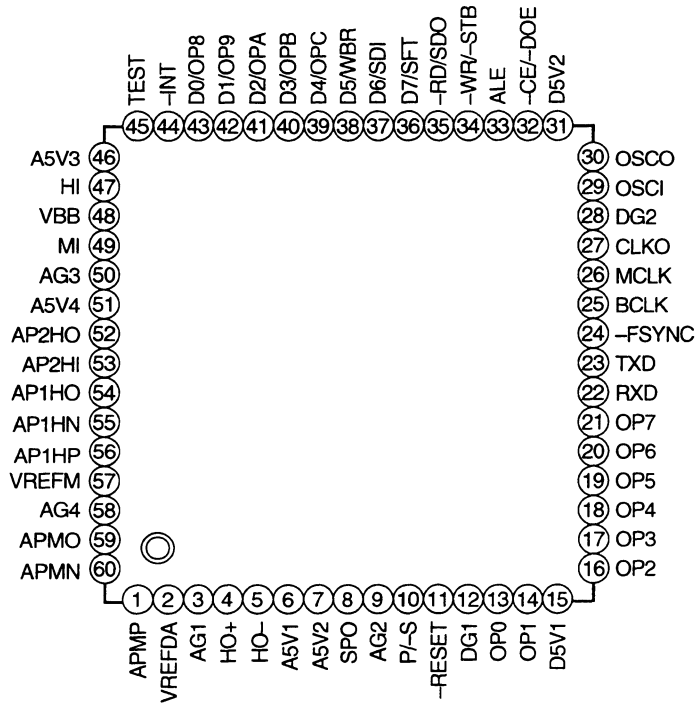
## 1. IC1




| Name | Pin | Dir. | Pull Up | Type | Io | Act. | Block | MHz | Descriptions |
|---|---|---|---|---|---|---|---|---|---|
| DB3 | 2 | bidir | --- | TTL | 8.0mA | high | PT5B03 | 2.0 | Data Bus [3] |
| DB2 | 3 | bidir | --- | TTL | 8.0mA | high | PT5B03 | 2.0 | Data Bus [2] |
| DB1 | 4 | bidir | --- | TTL | 8.0mA | high | PT5B03 | 2.0 | Data Bus [1] |
| DB0 | 5 | bidir | --- | TTL | 8.0mA | high | PT5B03 | 2.0 | Data Bus [0] |
| ADR1 | 6 | input | 12-38k | TTL | --- | high | PT5D01U | 2.0 | Address Bus [1] |
| ADR0 | 7 | input | 12-38k | TTL | --- | high | PT5D01U | 2.0 | Address Bus [0] |
| CSN | 8 | input | --- | TTL | --- | low | PT5D01 | 1.0 | Chip Select |
| REN | 10 | input | 12-38k | TTL | --- | low | PT5D01U | 2.0 | Read Enable Command |
| WEN | 9 | input | 12-38k | TTL | --- | low | PT5D01U | 2.0 | Write Enable Command |
| RST | 63 | input | --- | CMOS schmidt | --- | high | PC5D21 | 0.01 | Asynchronous Reset Input |
| INT0N | 11 | output | --- | CMOS | 2.0mA | low | PC5O01 | 0.01 | Interrupt Request |
| INT1N | 12 | output | --- | CMOS | 2.0mA | low | PC5O01 | 0.01 | Interrupt Request |
| DR0 | 38 | input | --- | CMOS | --- | low | PC5D01 | 0.6 | Dpits Receive Data [1] |
| DR1 | 39 | input | --- | CMOS | --- | low | PC5D01 | 0.6 | Dpits Receive Data [0] |
| DX0 | 40 | output | --- | CMOS | 4.0mA | low | PC5O02 | 0.6 | Dpits Transmit Data [1] |
| DX1 | 41 | output | --- | CMOS | 4.0mA | low | PC5O02 | 0.6 | Dpits Transmit Data [0] |
| CK512K | 37 | output | --- | CMOS | 2.0mA | high | PC5O01 | 0.6 | Dpits Bit Rate Clock |
| SR0 | 19 | input | 12-38k | TTL | --- | high | PT5D01U | 0.1 | Serial Receive Data Stream [0] |
| SR1 | 20 | input | 12-38k | TTL | --- | high | PT5D01U | 0.1 | Serial Receive Data Stream [1] |
| SX | 21 | output | --- | CMOS | 4.0mA | high | PC5O02 | 0.1 | Serial Transmit Data Stream |
| CK2M | 18 | output | --- | CMOS | 4.0mA | high | PC5O02 | 2.1 | Serial Stream Clock |
| EP0 | 13 | output | --- | CMOS | 2.0mA | high | PC5O01 | 0.01 | External Channel Pulse [0] |
| EP1 | 14 | output | --- | CMOS | 2.0mA | high | PC5O01 | 0.01 | External Channel Pulse [1] |
| EP2 | 15 | output | --- | CMOS | 2.0mA | high | PC5O01 | 0.01 | External Channel Pulse [2] |

| Name | Pin | Dir. | Pull Up | Type | Io | Act. | Block | MHz | Descriptions |
|---|---|---|---|---|---|---|---|---|---|
| EP3 | 16 | output | --- | CMOS | 2.0mA | high | PC5O01 | 0.01 | External Channel Pulse [3] |
| PI | 61 | input | --- | CMOS schmidt | --- | high | PC5D21 | 0.01 | Rotary Encoder Input [Pos] |
| NI | 62 | input | --- | CMOS schmidt | --- | high | PC5D21 | 0.01 | Rotary Encoder Input [Neg] |
| CLM0 | 43 | output | --- | CMOS | 4.0mA | high | PC5O02 | 0.01 | LED Column Drive [0] |
| CLM1 | 44 | output | --- | CMOS | 4.0mA | high | PC5O02 | 0.01 | LED Column Drive [1] |
| CLM2 | 45 | output | --- | CMOS | 4.0mA | high | PC5O02 | 0.01 | LED Column Drive [2] |
| CLM3 | 46 | output | --- | CMOS | 4.0mA | high | PC5O02 | 0.01 | LED Column Drive [3] |
| CLM4 | 47 | output | --- | CMOS | 4.0mA | high | PC5O02 | 0.01 | LED Column Drive [4] |
| CLM5 | 48 | output | --- | CMOS | 4.0mA | high | PC5O02 | 0.01 | LED Column Drive [5] |
| NROW0 | 50 | output | --- | CMOS | 4.0mA | low | PC5O02 | 0.01 | LED Row Drive [0] |
| NROW1 | 51 | output | --- | CMOS | 4.0mA | low | PC5O02 | 0.01 | LED Row Drive [1] |
| NROW2 | 52 | output | --- | CMOS | 4.0mA | low | PC5O02 | 0.01 | LED Row Drive [2] |
| NROW3 | 53 | output | --- | CMOS | 4.0mA | low | PC5O02 | 0.01 | LED Row Drive [3] |
| NROW4 | 54 | output | --- | CMOS | 4.0mA | low | PC5O02 | 0.01 | LED Row Drive [4] |
| NROW5 | 55 | output | --- | CMOS | 4.0mA | low | PC5O02 | 0.01 | LED Row Drive [5] |
| NROW6 | 56 | output | --- | CMOS | 4.0mA | low | PC5O02 | 0.01 | LED Row Drive [6] |
| NROW7 | 57 | output | --- | CMOS | 4.0mA | low | PC5O02 | 0.01 | LED Row Drive [7] |
| NROW8 | 58 | output | --- | CMOS | 4.0mA | low | PC5O02 | 0.01 | LED Row Drive [8] |
| NROW9 | 59 | output | --- | CMOS | 4.0mA | low | PC5O02 | 0.01 | LED Row Drive [9] |
| IP0 | 27 | input | 12-38k | CMOS | --- | high | PC5D01U | 0.01 | Input Port [0] |
| IP1 | 28 | input | 12-38k | CMOS | --- | high | PC5D01U | 0.01 | Input Port [1] |
| IP2 | 29 | input | 12-38k | CMOS | --- | high | PC5D01U | 0.01 | Input Port [2] |
| IP3 | 30 | input | 12-38k | CMOS | --- | high | PC5D01U | 0.01 | Input Port [3] |
| OP0 | 23 | output | | CMOS | 4.0mA | high | PC5O02 | 0.01 | Output Port [0] |
| OP1 | 24 | output | | CMOS | 4.0mA | high | PC5O02 | 0.01 | Output Port [1] |
| OP2 | 25 | output | | CMOS | 4.0mA | high | PC5O02 | 0.01 | Output Port [2] |
| OP3 | 26 | output | | CMOS | 4.0mA | high | PC5O02 | 0.01 | Output Port [3] |
| CK2K | 22 | output | | CMOS | 4.0mA | high | PC5O02 | 0.20 | 2kHz Clock Output (duty 25%) |
| CK16M | 36 | output | --- | CMOS | 2.0mA | high | PC5O01 | 16.4 | Master Clock Out |
| OSI | 33 | input | --- | Analog | --- | --- | PC5X02 | 16.4 | X'tal In (XIN) |
| OSO | 34 | output | --- | Analog | --- | --- | PC5X02 | 16.4 | X'tal Out (XOUT) |
| N.C. | 32 | | | | | | | | not used |
| N.C. | 42 | | | | | | | | not used |
| N.C. | 60 | | | | | | | | not used |
| VDD1 | 1 | vdd | | | | | | | Vdd (5V) |
| VDD2 | 31 | vdd | | | | | | | Vdd (5V) |
| VDD3 | 49 | vdd | | | | | | | Vdd (5V) |
| VSS1 | 17 | vss | | | | | | | Vss (GND) |
| VSS2 | 35 | vss | | | | | | | Vss (GND) |
| VSS3 | 64 | vss | | | | | | | Vss (GND) |

## 2. IC2

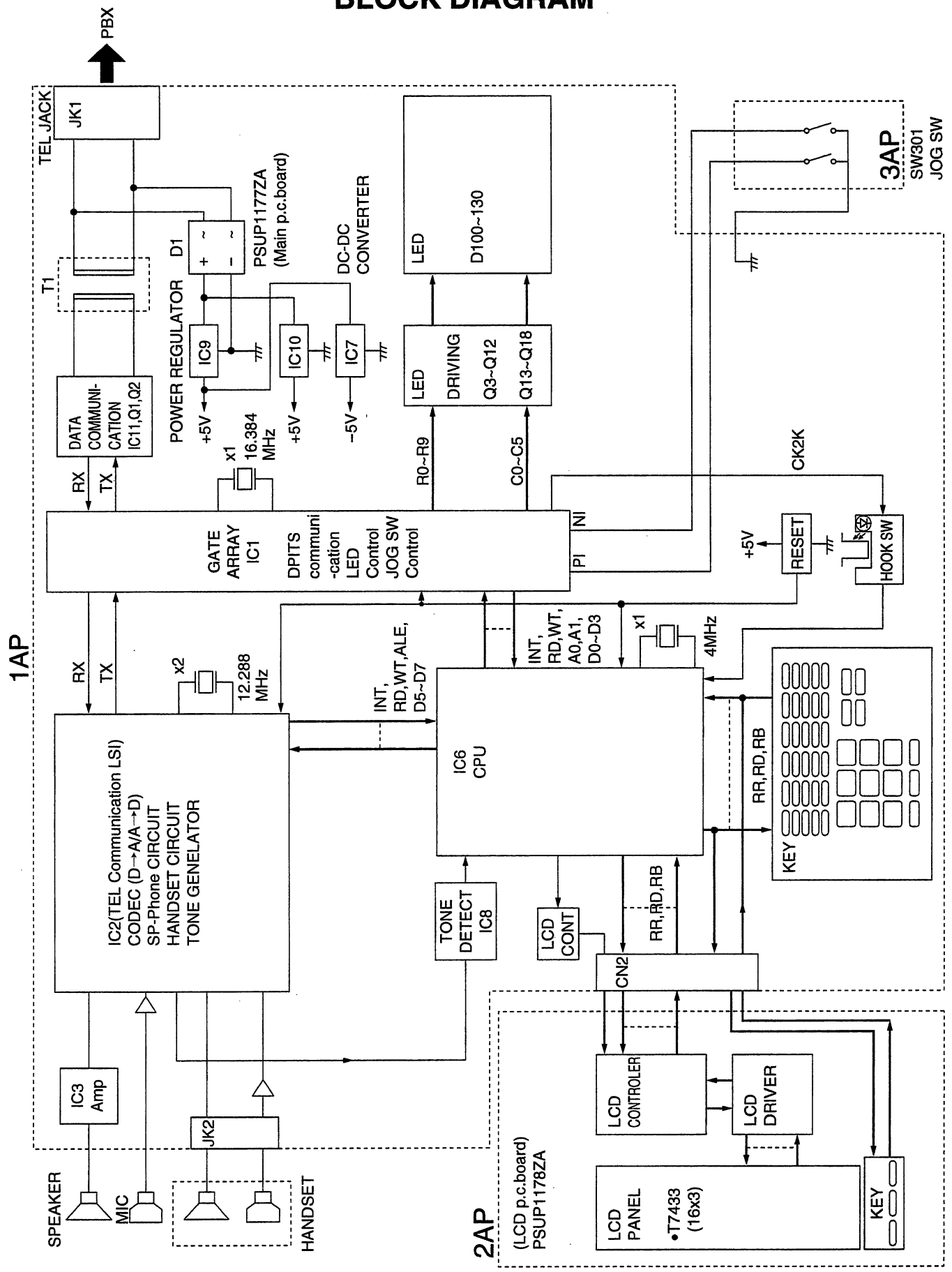



| Name | NO. | I/O | Classification | Function |
|---|---|---|---|---|
| APMP | 1 | Analog input | Analog | Non-inverting input terminal of microphone amplifier M1.<br>Connect to the microphone. |
| VREFDA | 2 | --- | Power supply, etc. | Reference voltage terminal of DAC.<br>Connect the capacitor of 40µF between this terminal and pin 9(AG2). |
| AG1 | 3 | | | Ground terminal of the analog circuit. |
| HO+ | 4 | Analog output | Analog | Output terminal for the handset receiver.<br>HO+ terminal and HO– terminal are biased to Vdd/2 voltage.<br>HO– terminal is the inverse porality output terminal for pin 4 (HO+).<br>Connect the capacitor in series between the handset and these terminals to cut the DC .<br>Use the nonpolar type capacitor. |
| HO– | 5 | | | |
| A5V1 | 6 | --- | Power supply, etc. | 5V power supply terminal of analog circuit. |
| A5V2 | 7 | | | |
| SPO | 8 | Analog output | Analog | Output terminal for the speaker amplifier.<br>Connect to the external speaker amplifier input terminal.<br>SPO terminal is biased to Vdd/2 voltage.<br>Connect the capacitor of 0.1µF in series between the external speaker amplifier input terminal and this terminal. |
| AG2 | 9 | --- | Power supply, etc. | Ground terminal of the analog circuit. |
| P/–S | 10 | CMOS input | Micro-computer interface | Mode selection terminal of microcomputer interface. Inputting "0" selects the serial mode, and "1" selects the parallel mode. |
| –RESET | 11 | | | System reset terminal.<br>The system is reset when "0" is pressed. |
| DG1 | 12 | --- | Power Supply, etc. | Ground terminal of the digital circuit. |

| Name | NO. | I/O | Classification | Function |
|---|---|---|---|---|
| OP0 | 13 | 3 states output | Output port | Outputs BIT0 signal of OPORT1 resistor. |
| OP1 | 14 | | | Outputs BIT1 signal of OPORT1 resistor. |
| D5V1 | 15 | --- | Power Supply, etc. | 5V power supply terminal of digital circuit. |
| OP2 | 16 | 3 states output | Output port | Outputs BIT2 signal of OPORT1 resistor. |
| OP3 | 17 | | | Outputs BIT3 signal of OPORT1 resistor. |
| OP4 | 18 | | | Outputs BIT4 signal of OPORT1 resistor. |
| OP5 | 19 | | | Outputs BIT5 signal of OPORT1 resistor. |
| OP6 | 20 | | | Outputs BIT6 signal of OPORT1 resistor. |
| OP7 | 21 | | | Outputs BIT7 signal of OPORT1 resistor. |
| RXD | 22 | TTL input | PCM interface | Input terminal for PCM data |
| TXD | 23 | Output | | Output terminal for PCM data |
| –FSYNC | 24 | TTL input | | Input terminal of Sync. signal for PCM interface. The frequency of input sync. signal is 8 kHz. |
| BCLK | 25 | | | Input terminal of shift clock pulse for PCM data. Input pulse frequency range is 64 kHz~2.048 MHz.<br>PCM data (TXD terminal signal) is output at the positive edge.<br>PCM data (RXD terminal signal) is sampled at the negative edge.<br>The sampling is performed inside LSI. |
| MCLK | 26 | Output | Clock | Clock pulse output terminal. Output pulse frequency is 6.144MHz.<br>System reset (inputting "0" to –RESET terminal) doesn't stop this output. |
| CLKO | 27 | | | Clock pulse output terminal which has selective frequencies.<br>The following 4 frequencies can be selected by resistor setting:<br>12.228, 4.096, 2.048, 1.536 (MHz)<br>System reset (inputting "0" to –RESET terminal) selects the frequency of 1.536MHz and doesn't stop this output. |
| DG2 | 28 | --- | Power supply, etc. | Ground terminal of digital circuit. |
| OSCI | 29 | --- | Clock | Input terminal of oscillation circuit.<br>Connect the oscillator and resistor between this terminal and pin 30(OSCO), moreover, connect the capacitor between this terminal and digital ground to make the oscillation circuit. |
| OSCO | 30 | --- | | Output terminal of oscillation circuit.<br>Connect the oscillator and resistor between this terminal and pin 29 (OSCI), moreover, connect the capacitor between this terminal and digital ground to make the oscillation circuit. |
| D5V2 | 31 | --- | Power supply, etc. | 5V power supply terminal of digital circuit. |
| –INT | 44 | Output | Micro-computer interface | Outputs 8 kHz clock pulse which is synchronized with –FSYNC. |
| TEST | 45 | CMOS input | Power supply, etc. | Test terminal<br>Connect to the digital ground. |
| A5V3 | 46 | --- | | 5V power supply terminal of analog circuit. |
| HI | 47 | Analog input | Analog | Input terminal of TX handset signal.<br>Either this signal or the signal supplied to pin 49 (HI) is input to AD converter. |
| VBB | 48 | --- | Power supply, etc. | Reference voltage terminal of AD converter.<br>Connect the capacitor of 10µF between VBB terminal and pin 50 (AG3). |

| Name | NO. | I/O | Classification | Function |
|---|---|---|---|---|
| MI | 49 | Analog input | Analog | Input terminal of TX microphone signal.<br>Either this signal or the signal supplied to pin 47 (HI) is input to AD converter. |
| AG3 | 50 | --- | Power supply, etc. | Ground terminal of analog circuit. |
| A5V4 | 51 | | | 5V power terminal of analog circuit. |
| AP2HO | 52 | Analog output | Analog | Output terminal of microphone amplifier H2.<br>Connect the capacitor of 0.1µF to this terminal to cut the DC. |
| AP2HI | 53 | Analog input | | Inverting input terminal of microphone amplifier H2.<br>Connect the capacitor of 0.1µF to this terminal to cut the DC. |
| AP1HO | 54 | Analog output | | Output terminal of microphone amplifier H1.<br>Connect the capacitor of 0.1µF to this terminal to cut the DC. |
| AP1HN | 55 | Analog input | | Inverting input terminal of microphone amplifier H1.<br>Connect to the handset. |
| AP1HP | 56 | Analog input | Analog | Non-inverting input terminal of microphone amplifier H1. |
| VREFM | 57 | --- | Power supply, etc. | Reference voltage terminal of microphone amplifier.<br>Connect the capacitor of 40 µF between this terminal and pin 56 (MICG). |
| AG4 | 58 | | | Ground terminal of analog circuit. |
| APMO | 59 | Analog output | Analog | Output terminal of microphone amplifier.<br>Connect the capacitor of 0.1µF to this terminal to cut the DC. |
| APMN | 60 | Analog input | | Non-inverting input terminal of microphone amplifier M. |

# BLOCK DIAGRAM



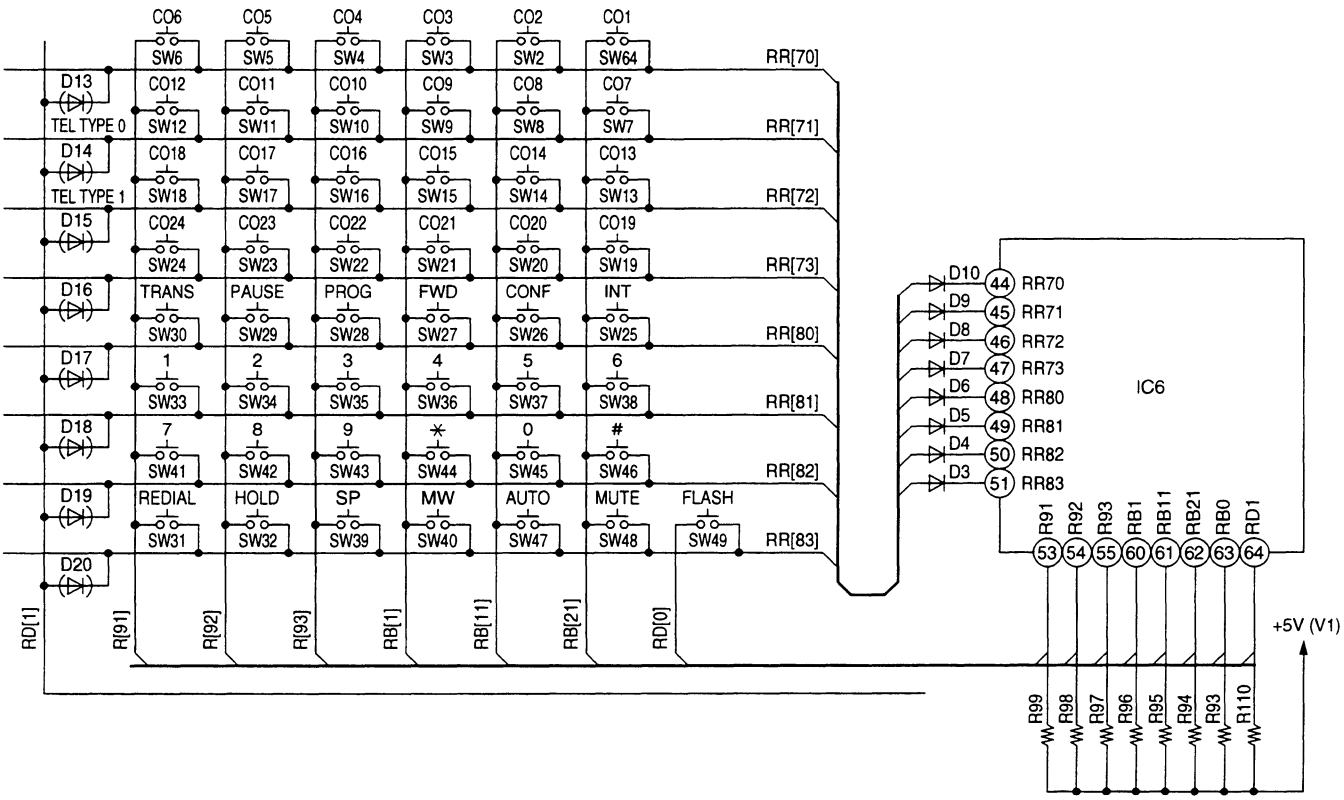
# CIRCUIT OPERATIONS

## 1. KEY INPUT CONTROL CIRCUIT

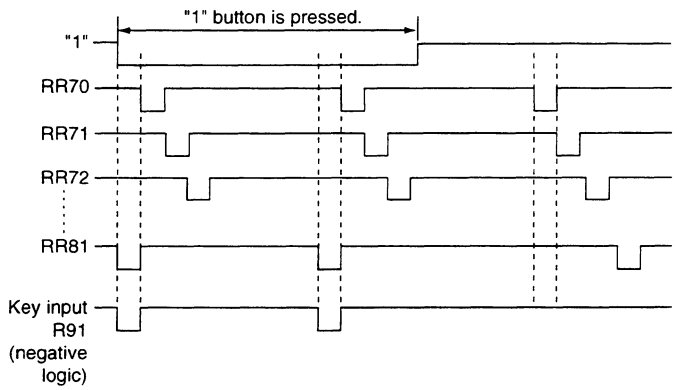
### 1) Circuit Operation

Sequential input information (negative logic) from the DSHS proprietary telephone is executed by dynamic scanning.
The ports RR70 to RR73, RR80 to RR83 of IC8 are brought to low status consecutively.
If a key is pressed, the key-in information input is executed by ports R91 to R93, RB1, RB11, RB21, RB0, RD1.

Circuit Diagram




Key Input Control Timing Chart



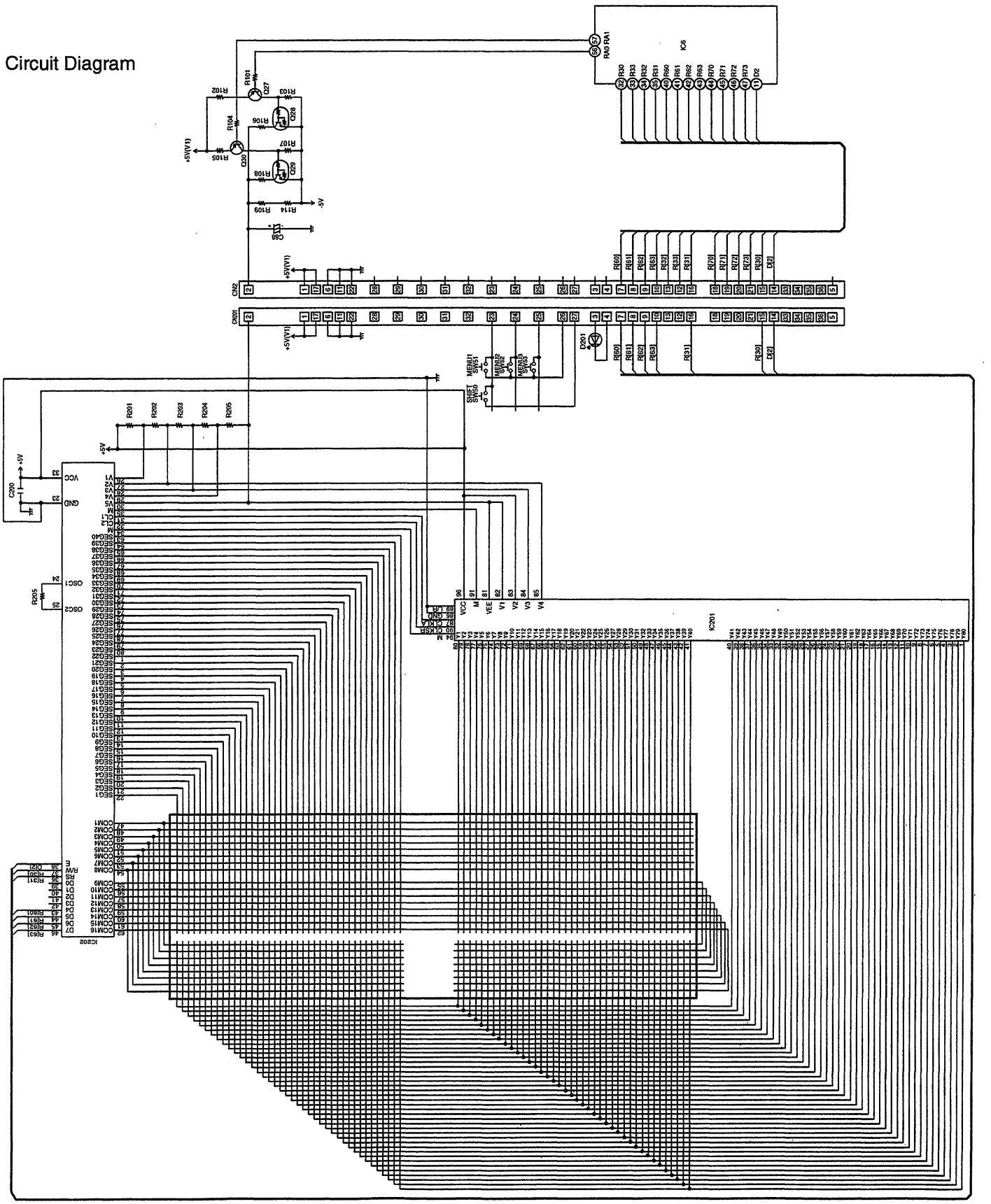

When "RR81" is low status and the "1" button is pressed, the key-in information is read.

## 2. LCD CONTROL CIRCUIT

### 1) Circuit Operation

The LCD data is output from pins 32 to 35, 40 to 47 and 11 of IC6. LCD contrast adjustment is performed by the circuit composed of Q28, Q29, R109, R108 and R106. The contrast is determined only by the voltage level between V5 and VEE of IC202 and IC201. Higher potential makes the contrast high.

Circuit Diagram



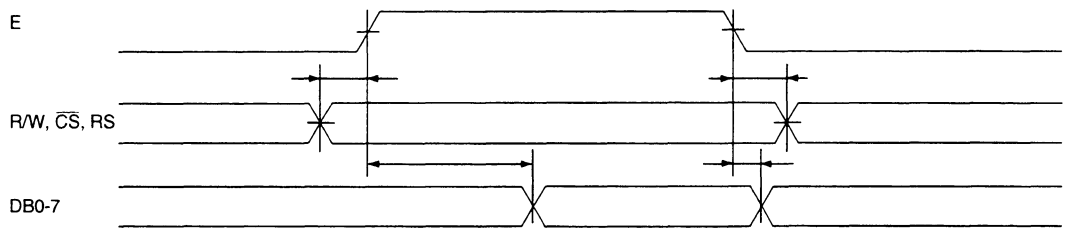
LCD Contrast Control

| CONTRAST | IC9 Pin 56 | IC9 Pin 57 |
|---|---|---|
| HIGH | H | L |
| MIDDLE | L | H |
| LOW | H | H |

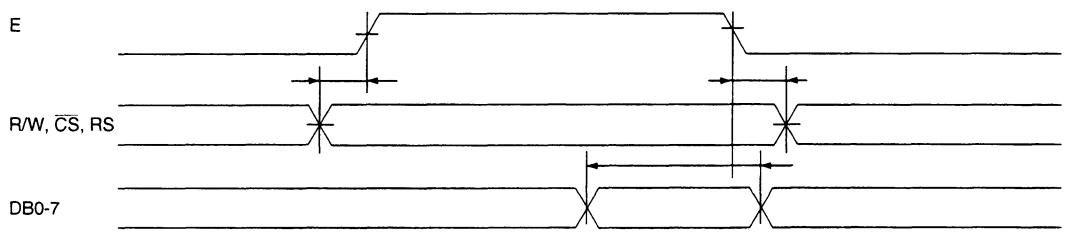
## 4-bit Data Transfer Timing Sequence

Data Transfer Timing Sequence

READ CYCLE




WRITE CYCLE



# 3. LED CIRCUIT

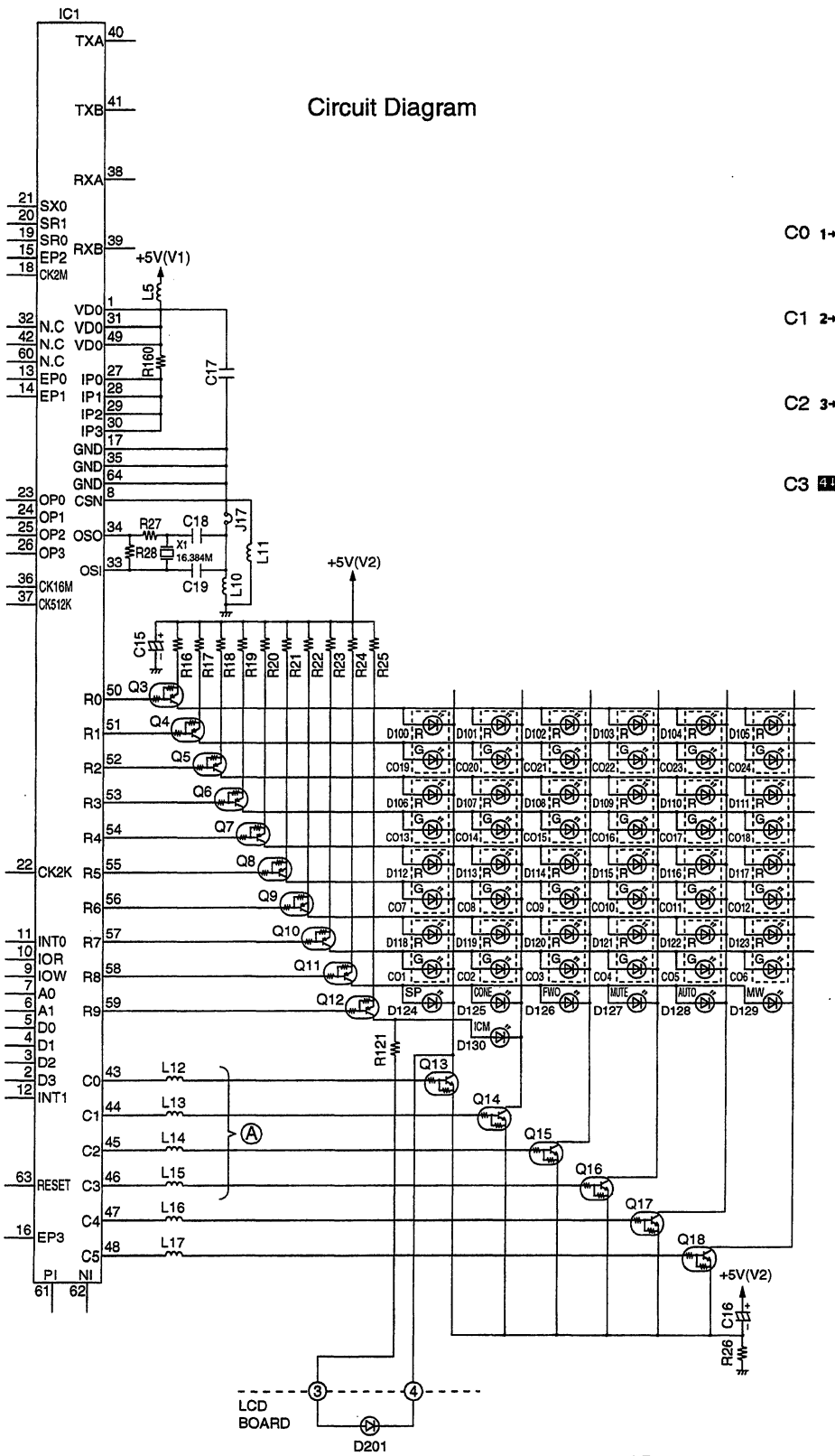
## 1) Circuit Operation

The LED executes dynamic lighting for the status indicators, and control is executed by the output ports C0 to C5 (column) and R0 to R9 of IC1.

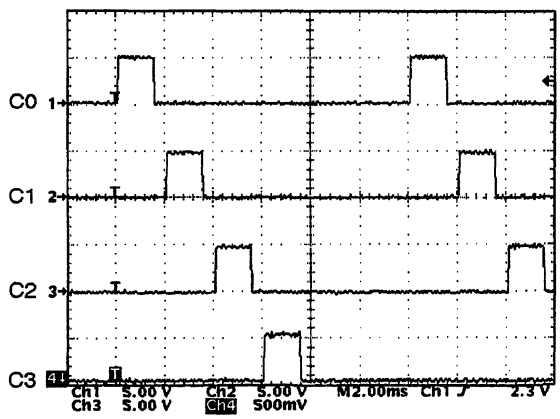
A fixed pulse (T=1.82 msec) is output continuously from the/SCK1 terminal of IC9. This pulse is counted and the output of IC1 is shifted sequentially from C0 to C5.

R0 to R7 of IC1 also output pulses, and the lighting of the LED is controlled by the timing of the output ports C0 to C5.

Circuit Diagram




Ⓐ Waveform



# 4. DATA COMMUNICATION CIRCUIT

### 1) Function

The data communication circuit serves the following functions:
Information exchanger between the DSHS and DSHS proprietary telephone, key input information as well as data for the LED control, LCD control, etc. This information is continuously exchanged at all times.

### 2) Circuit Operation

When the DSHS proprietary telephone receives an IRQ signal from the DSHS and after sending the key input information to the DSHS and receiving data for the LED control, etc., the DSHS proprietary telephone will return to the DSHS an acknowledge signal.

### 3) Reception

The data from the DSHS is received via the H and L lines along the path shown below.

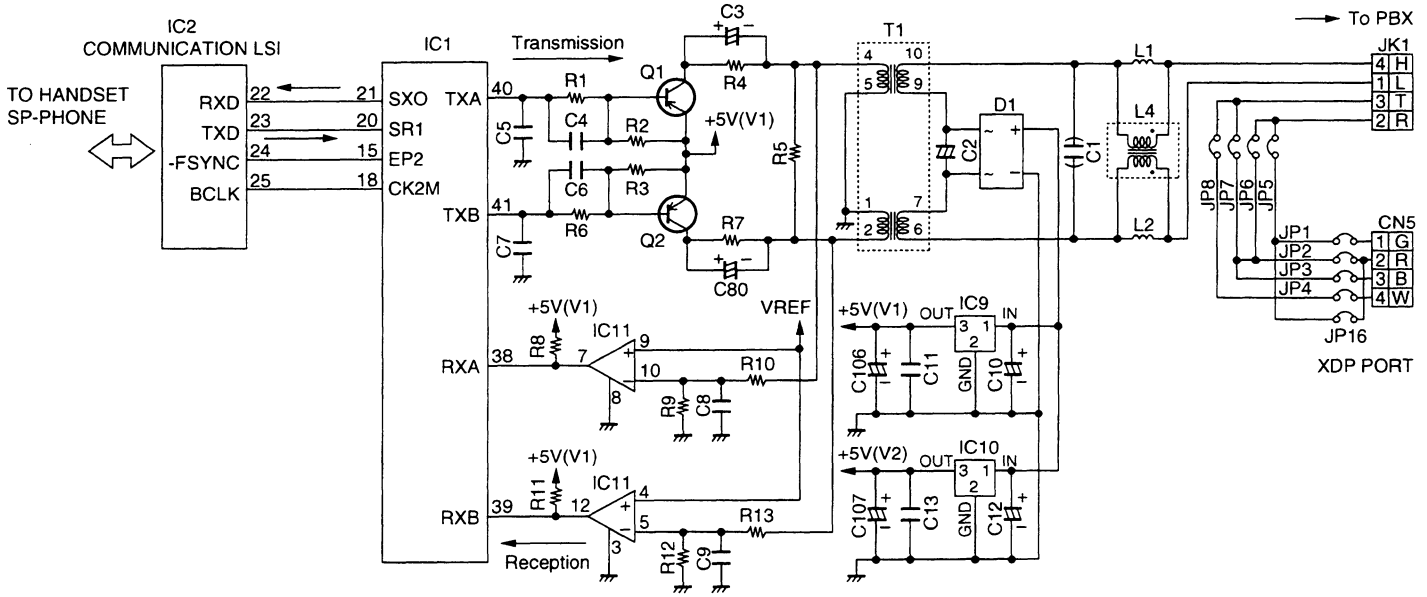
H, L Line → T1 → IC11 Pin 5, 10 → IC1 Pin 38, 39 → IC1 Pin 21 → IC2 Pin 22

### 4) Transmission

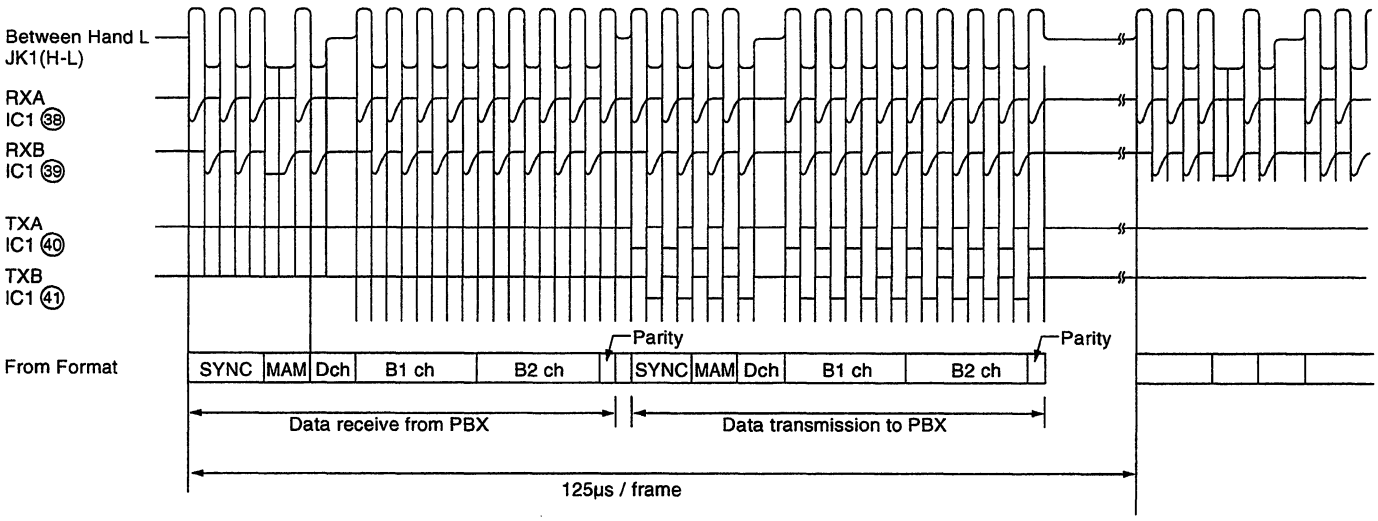
The data to the DSHS proprietary telephone is transmitted along the following path.

IC2 Pin 23 → IC1 Pin 20 → IC1 Pin 40, 41 → Q1, Q2 → T1 → H, L Line

Circuit Diagram



Timing Chart for D-PITS Transmission

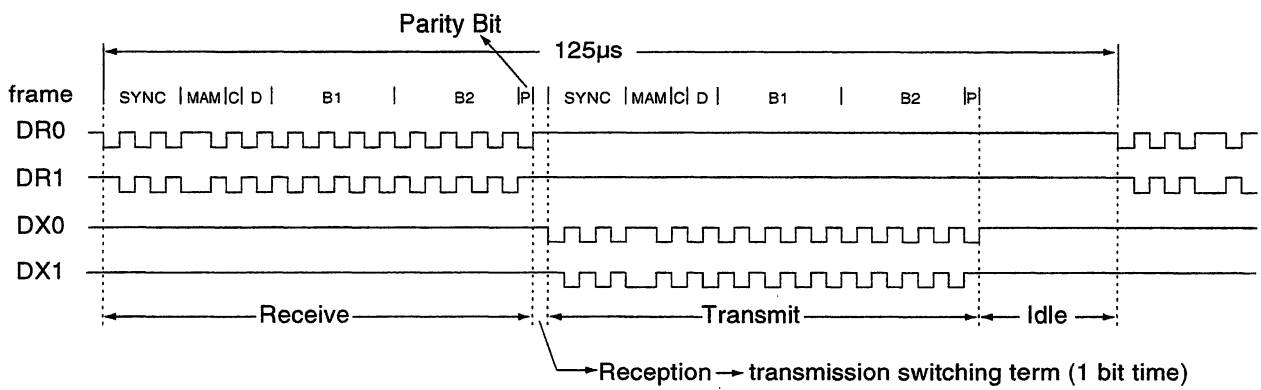



**5) IC1 (GATE ARRAY) DPITS Interface**

DPITS Layer 1 interface. DR [1:0] is receiving input and DX [1:0] is transmitting output.

Layer 1 is the transmission method of Ping-Pong type which is AMI encoded. "SYNC/MAMC/D/B1/B2/P" data is received in the first half at 125us/frame. After 1 bit time has passed since receiving P data, "SYNC/MAM/C/D/B1/B2/P" is transmitted. 1 bit time is 512kHz. 7-bit time idle term comes after receiving P data.

Dpits Frame Timing



### 6) PCM interface (between IC1 and IC2)

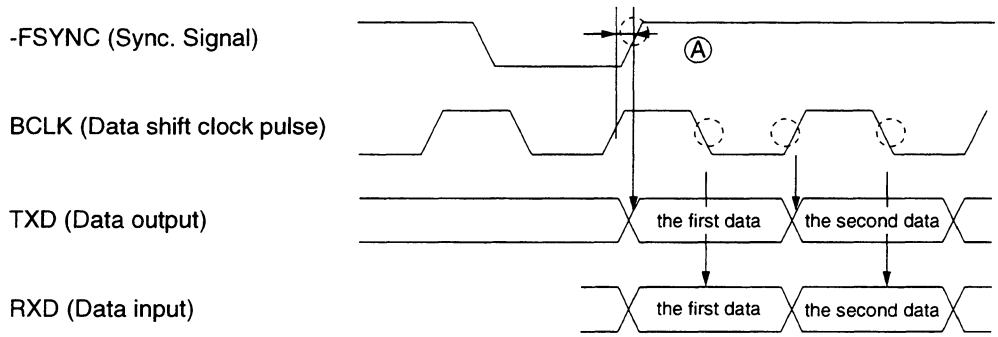
PCM interface consists of following 4 terminals.

PCM interface terminal

| | | | |
|---|---|---|---|
| –FSYNC | 8kHz sync. signal input terminal | BCLK | PCM data shift clock input terminal |
| TXD | TXD data output terminal | RXD | PCM data input terminal |

The first PCM data is output from TXD at the positive edge of -FSYNC. The second data and the followings are output at the positive edge of BCLK. After all data of 8 bit are output, the last data is kept until the positive edge of next -FSYNC. The positive edge of BCLK should be within ±100ns from the positive edge of -FSYNC.
The PCM data input from RXD is sampled at the negative edge of BCLK inside LSI. The sampling of the first data is performed between the positive edge of -FSYNC and the first negative edge of BCLK. After completing the sampling of all data of 8 bit, this sampling pauses until the next positive edge of -FSYNC.

Pulse Timing



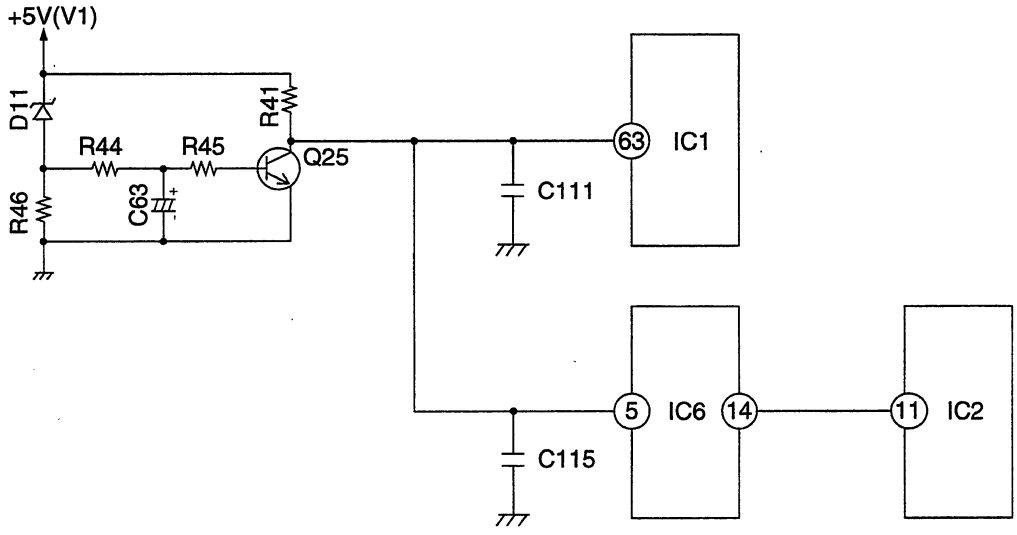

(–100ns≦Ⓐ≦ +100ns)

## 5. RESET CIRCUIT

### 1) Circuit Operation

This circuit is used for transmission of a reset pulse to the CPU (IC6) at the following times, connecting the telephone line jack and circuit operation.
The timing chart is shown below.

Circuit Diagram




Power ON

↓

Q25 OFF
The reset signal goes up with the power voltage.

↓

D11 Zener Diode ON

↓

Charging C63 is started.
The base voltage of Q25 goes up.

↓

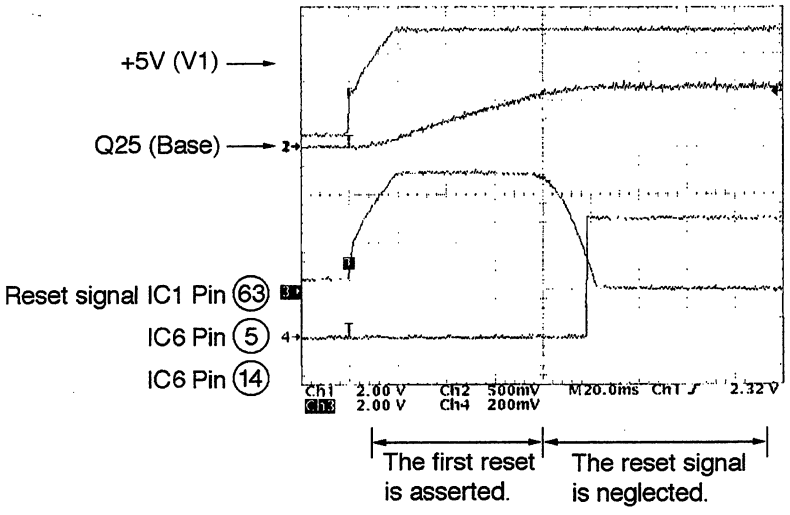
Q25 ON

The reset signal is negledted.

↓

Reset signal is asserted

Timing Chart

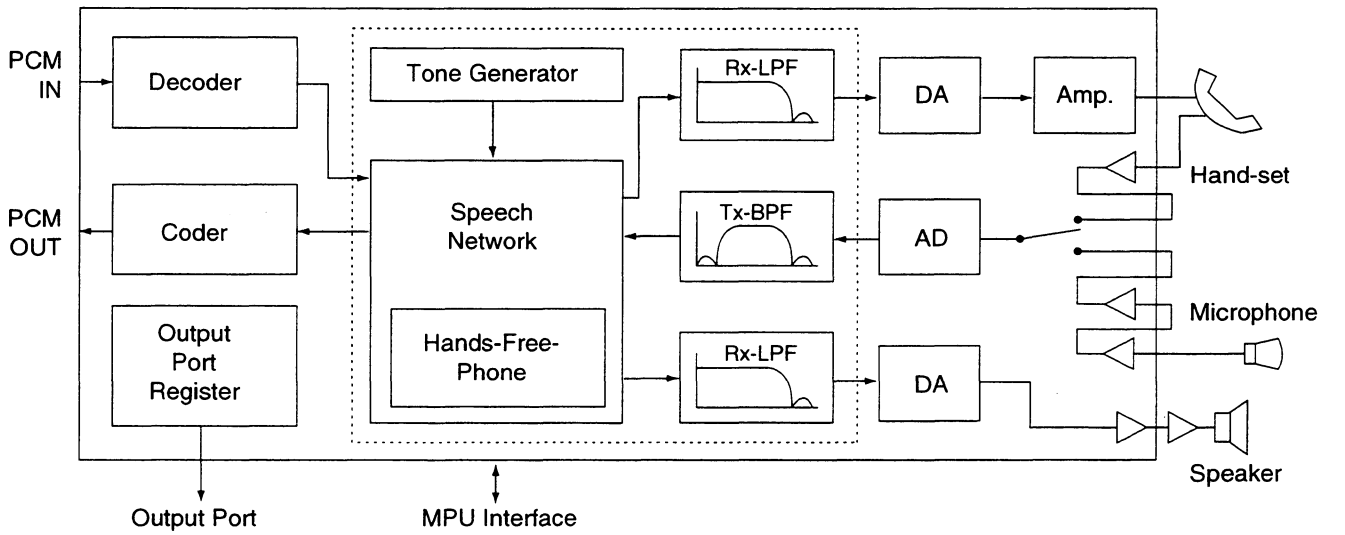


## 6. TONE GENERATION CIRCUIT

### 1) Function

Calling tones, Busy tone, DTMF signal and Key in tone are generated in IC2.

IC2 Block Diagram




DTMF Frequency Table

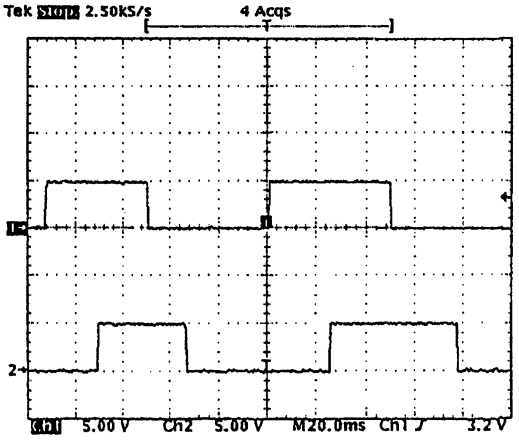
| | | High Group (IC9 Pin 77) | | |
|---|---|---|---|---|
| | | 1209 Hz | 1336 Hz | 1477 Hz |
| Low Group (IC9 Pin 78) | 697 Hz | 1 | 2 | 3 |
| | 770 Hz | 4 | 5 | 6 |
| | 852 Hz | 7 | 8 | 9 |
| | 941 Hz | * | 0 | # |

# 7. JOG DIAL CIRCUIT

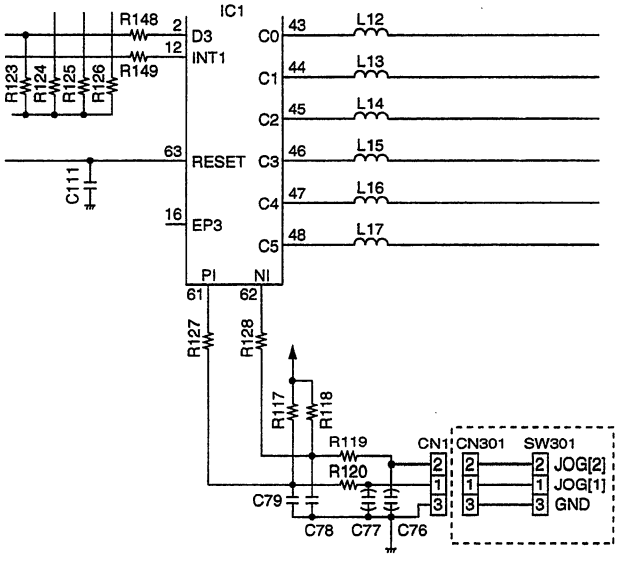
### 1) Circuit Operation

This unit is equipped with the JOG switch, which makes the settings of the volume, function selection speed dial, etc. easy and convenient. This JOG switch consists of 2-phase rotary encoder, and the gate array of IC1 counts the number of the rotation to control. The sampling cycle is 1ms and provided with the chattering protective circuit whose available pulse width is 1ms or more.

JOG Dial Input Signal



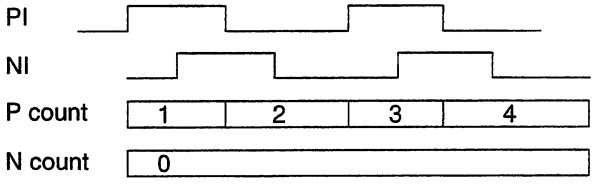

Circuit Diagram




These are the rotary encoder inputs, and sampled 1 kHz (1 msec)/cycle. The built-in chattering protective circuit neglects the input pulse of 1 msec or less. The high pulse of 2 msec or more is available. The availability of the pulse with the width of 1~2 msec is not ensured.
The changed number of these 2-phase inputs is counted cumulatively. The maximum counting value is 255.

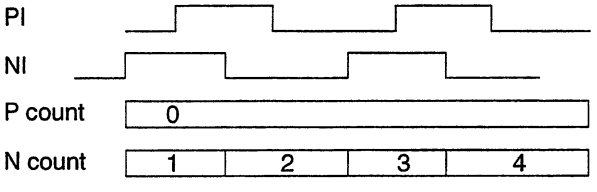
[Forward phase count]

Counts PI rising at NI=0, and PI falling at NI=1.



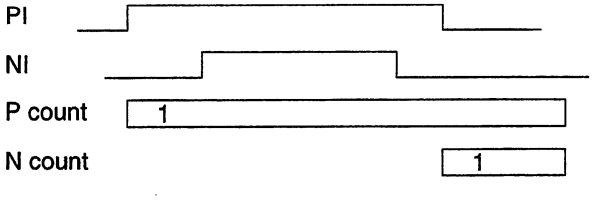

[Reverse phase count]

Counts PI rising at NI=1, and PI falling at NI=0.



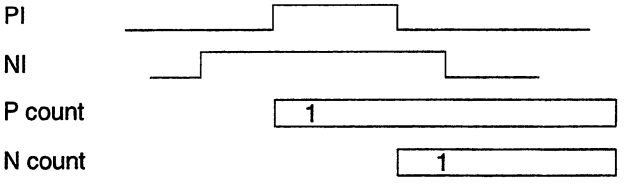

[Reverse rotation count-1]

Each P/N is added 1 at the reverse rotation.




[Reverse rotation count-2]

Each P/N is added 1 at the reverse rotation.

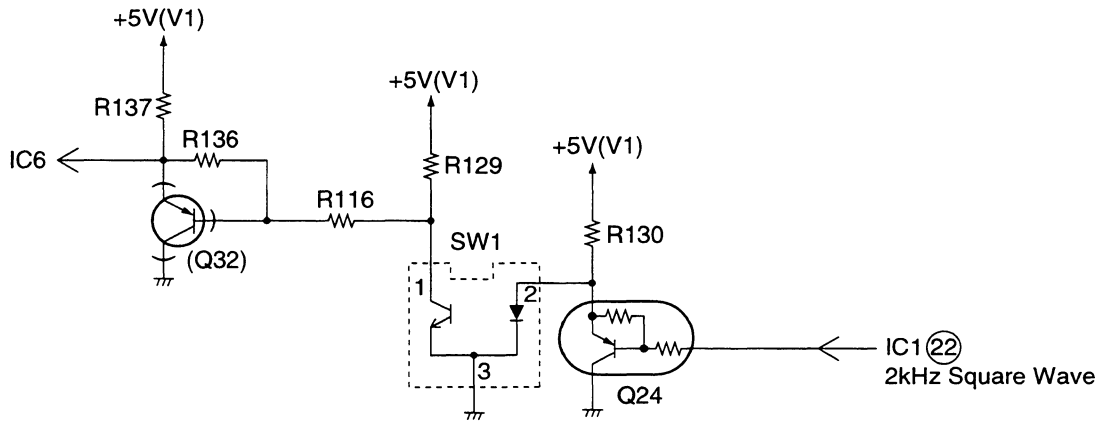


## 8. HOOK SWITCH CIRCUIT

### 1) Circuit Operation

The hook switch of this unit employs the photo switch consisting of LED and photo transistor. The 2kHz pulse from the gate array of IC2 causes the LED to emit the light. The light is interrupted at ON-HOOK and passes through at OFF-HOOK by the hooking bar, so that the hooking is performed controlling the light of the photo transistor. The detection signal is determined by the microcomputer of IC6.

Circuit Diagram




## 9. HANDSET CIRCUIT

### 1) Transmission signal path

The analog input signal from the handset microphone is input to the communication LSI through the IC2 built-in analog amplifier. In this LSI the network control based on A/D conversion and the handset software and the gain control based on the down load data from the PBX are performed. The voice data is sent to IC1 by the serial transmission. The voice data is transmitted between PBX and DPITS with the protocol originated by KME.

### 2) Reception signal path

The voice serial data transmitted from PBX is sent to IC1 or IC2 by the serial data. The network control, gain control, A/D conversion is performed in IC2, then the data is output from the handset speaker. Q31 of the handset speaker performs the mute operation by controlling IC6.

### 3) Circuit diagram for transmission/reception signal path

Refer to page 39.

## 10. SP-PHONE CIRCUIT

**1) Transmission signal path**

The analog input signal from SP-phone microphone is input to the communication LSI through the IC2 built-in analog amplifier. In this LSI the network control based on A/D conversion and the handset software and the gain control based on the down load data from the PBX are performed. The voice data is sent to IC1 by the serial transmission. The voice data is transmitted between PBX and DPITS with the protocol originated by KME. IC3 is the SP-phone amplifier, which turns ON/OFF using the port of IC2. The analog switch of IC12 interrupts the input signal.

**2) Reception signal path**

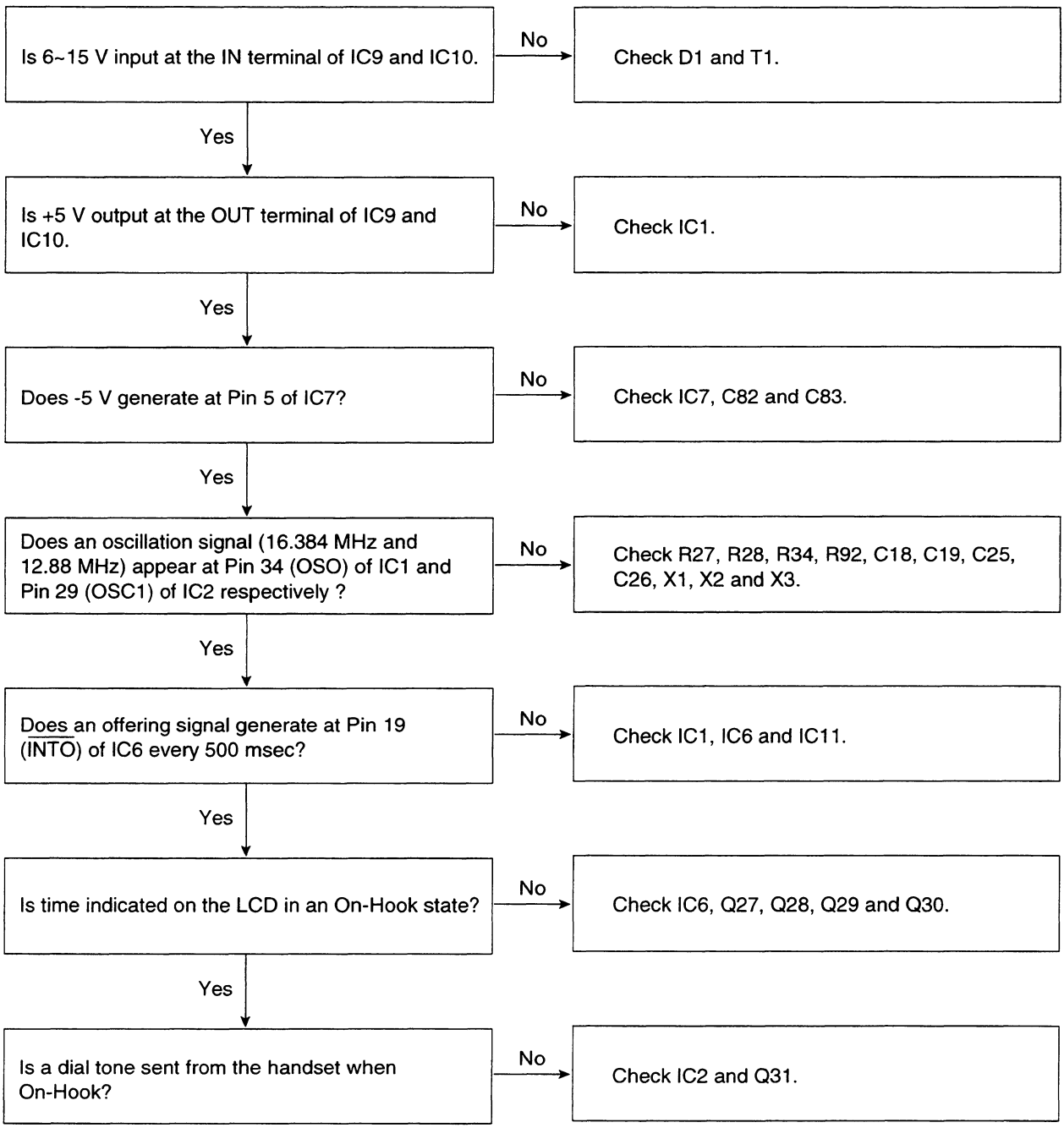
The voice serial data transmitted from PBX is sent to IC2 by the serial transmission. Then the signal is outpout from the handset speakerphone after performing the network control, gain control, and A/D conversion in IC2. The SP-phone microphone has the mute function, which interrupts the input signal with the analog switch and controls the port of IC2 with Q26.

**3) Circuit diagram for transmission/reception signal path**

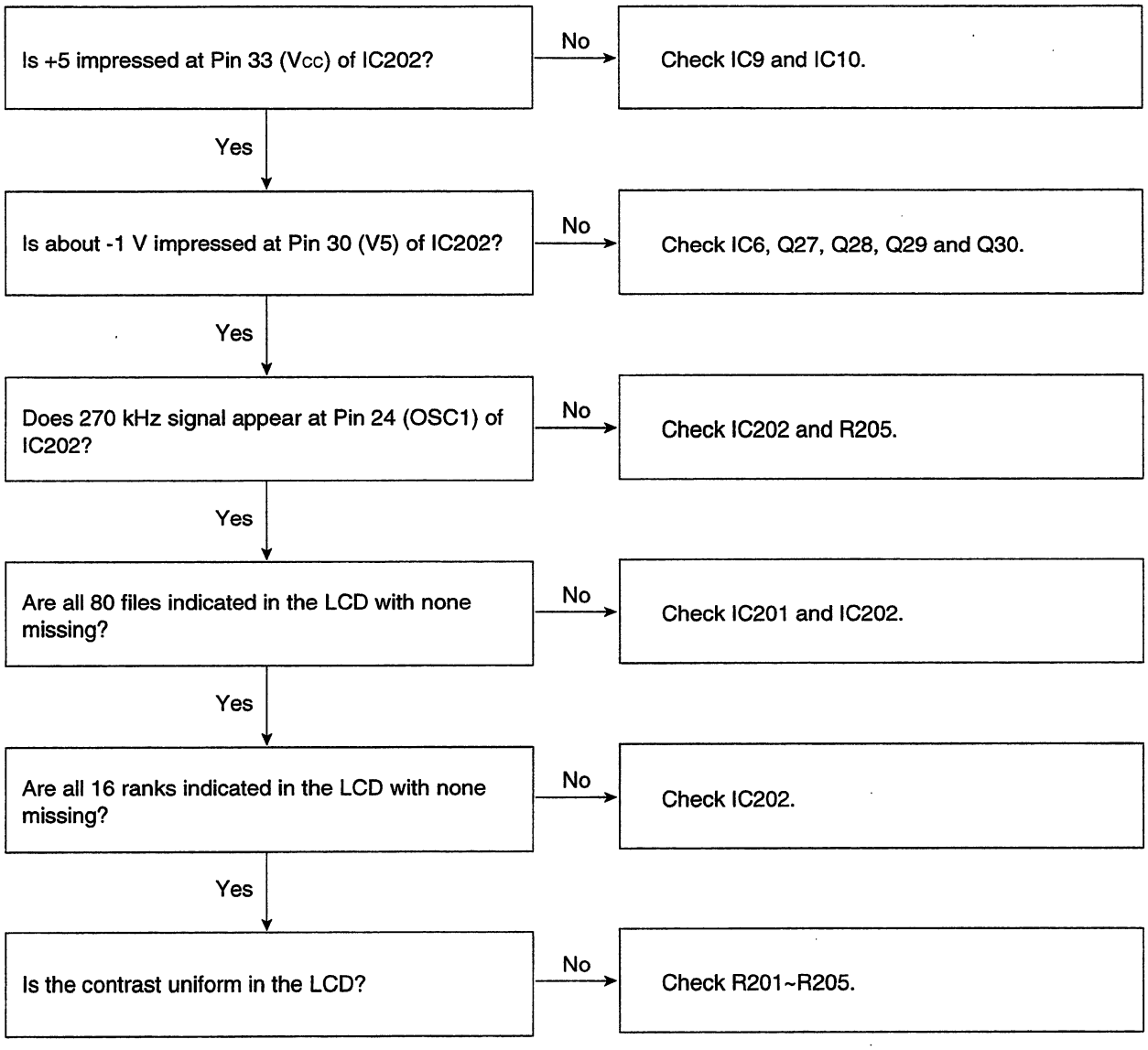
Refer to page 39.

# TROUBLESHOOTING GUIDE

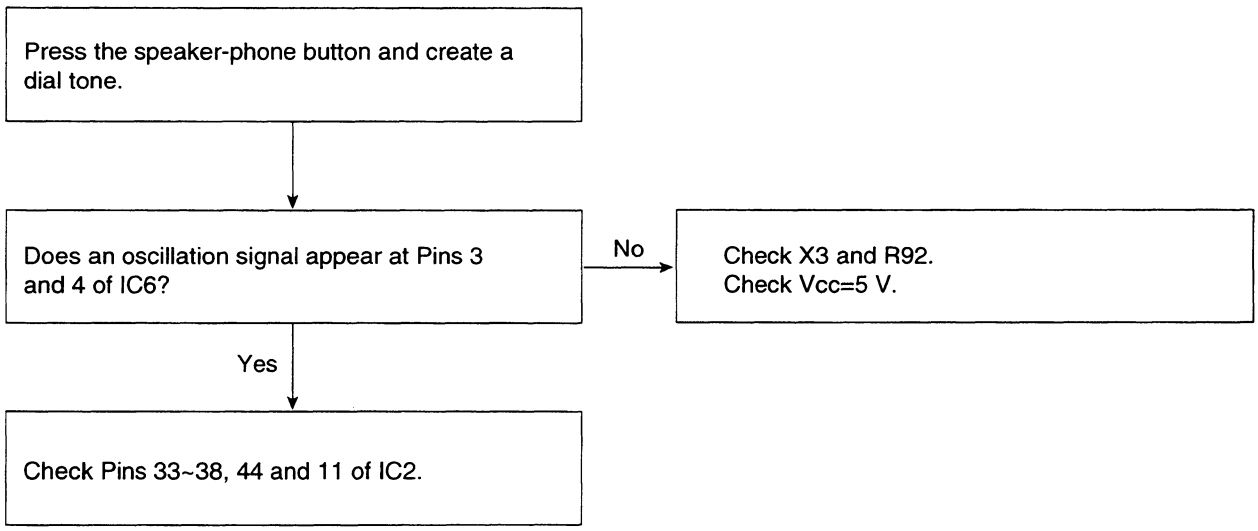
## 1. NO OPERATION.



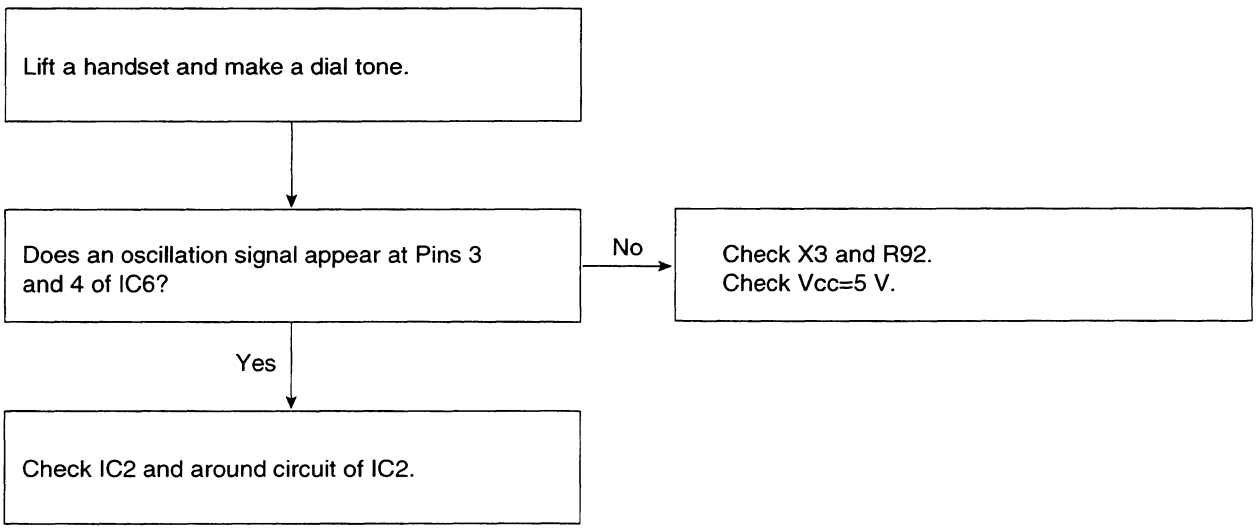
## 2. THE LCD DOES NOT OPERATE.



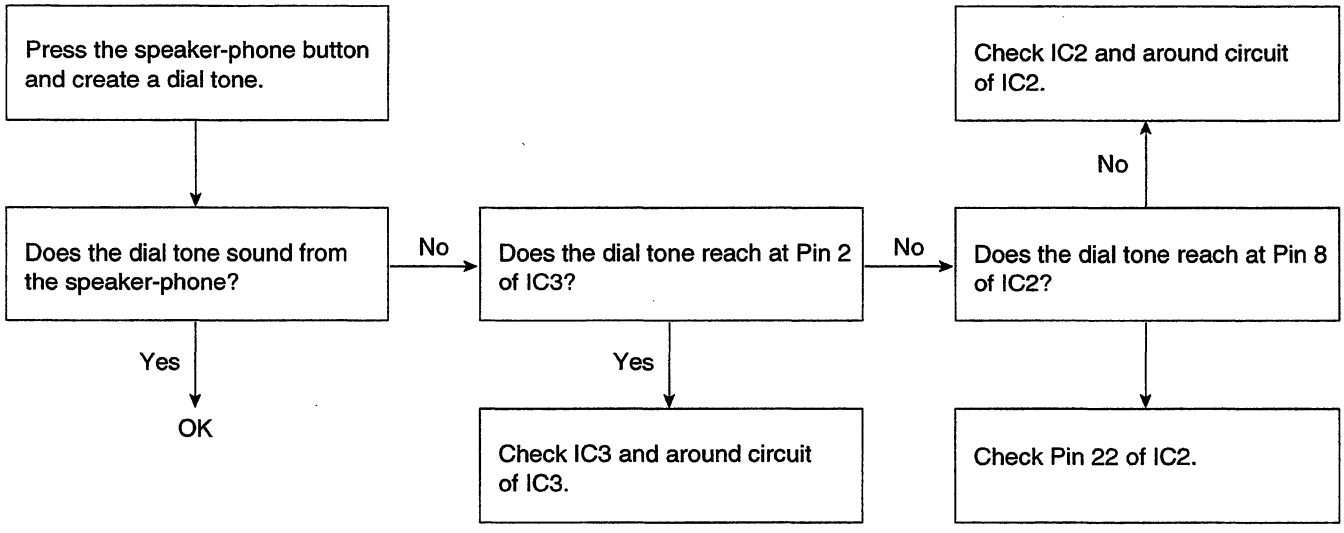
## 3. THE ELECTRONIC VOLUME OF THE SPEAKER-PHONE DOES NOT WORK.



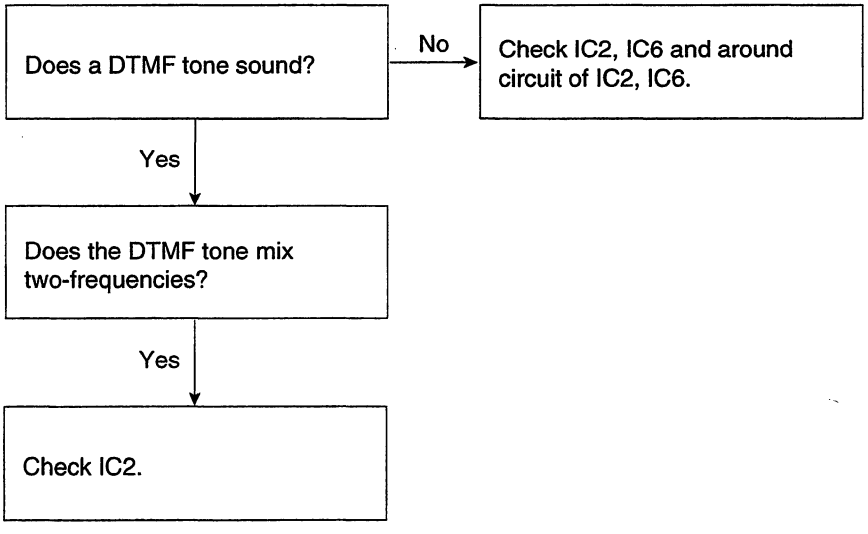

## 4. THE ELECTRONIC VOLUME OF THE HANDSET DOES NOT WORK.



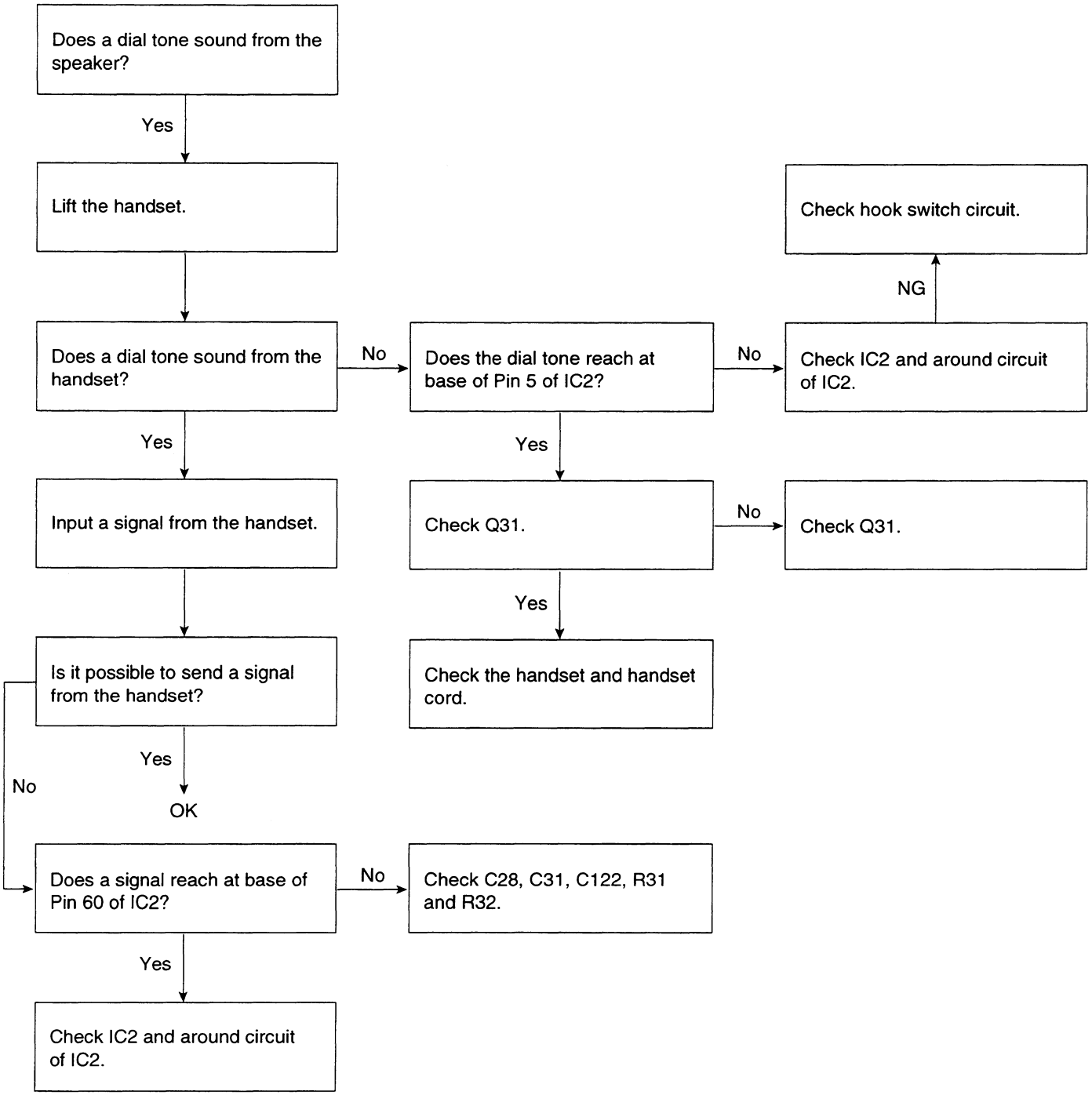
## 5. SPEAKER-PHONE TROUBLE.



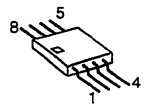

## 6. TONE DIAL TROUBLE.



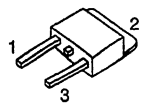
## 7. HANDSET TROUBLE.



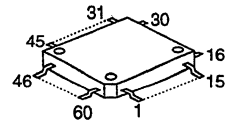
# TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES



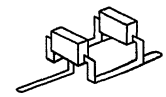

PQVIMC34119D



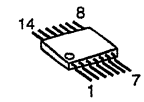

PSVIBA05FP



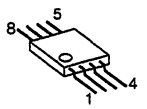

PSVITC5324F2



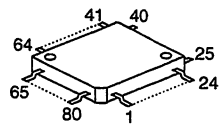
PSVII24019T1



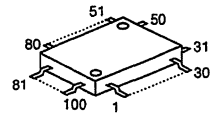

PQVINJM319V



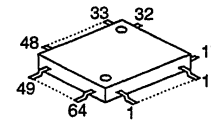

PQVINJM2904F
PQVINJU7660M



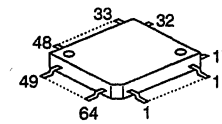

PSVI44780B24



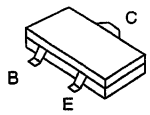

PQVILC7931D



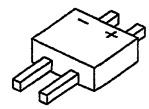

PSVIBU65050D



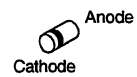

PSVI40612A04



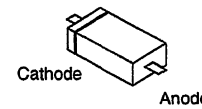

2SA1576Q, PQVTFB1J3P
PQVTDTA143XU, UN5213
PQVTDTD133HK, 2SC4081Q



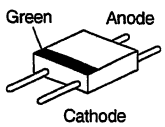
PQVDS1ZB60F1



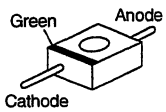

RLS71



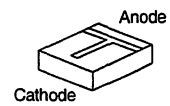

PSVDUDZ39B




PQVDPY1204




PQVDBR1102W
PQVDPY1102




PSVD111R820R

# HOW TO REPLACE THE FLAT PACKAGE IC

If you do not have the special tools (for example: SPOT HEATER) to remove the SPOT HEATER'S Flat IC, if you have solder (large amount) a soldering iron and a cutter knife, you can easily remove IC's even though large than 100 pin.

## 1. PREPARATION

· SOLDER - - - - - - - - Sparkle Solder 115A-1, 115B-1
OR
Almit Solder KR-19, KR-19RMA

· Soldering iron - - - - - Recommended power consumption is between 30 W to 40 W.
Temperature of Copper Rod 662 ± 50 °F (350 ±10℃ )

(An expert may handle a 60~80 W iron, but a beginner might damage the foil by overheating.)

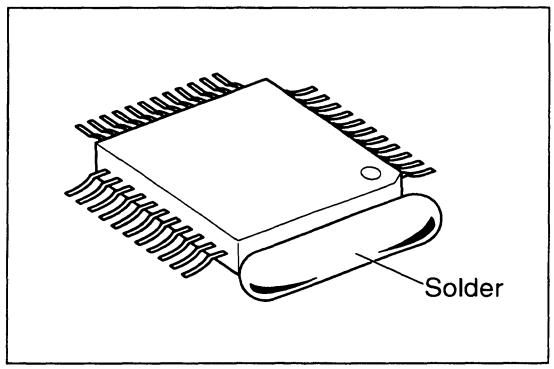
· Flux - - - - - - - - - - - HI115 Specific gravity 0.863

(Original flux should be replaced daily.)

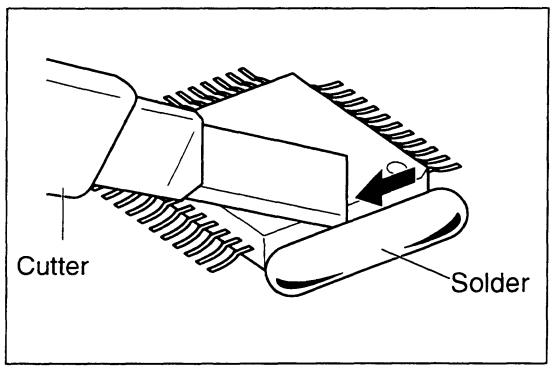
## 2. FLAT PACKAGE IC REMOVE PROCEDURE

1) When all of the IC lead can not been seen at the standard degree, fill with large quantities of solder.

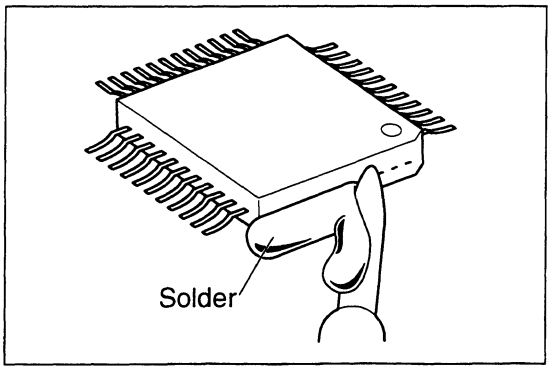
**Note:**
If you do not fill with solder and directly cut the IC lead with the cutter, stress may build up directly in the P.C.board's pattern. If you do not fill with large quantities of solder as in step 1 the P.C.board pattern may be removed.




2) Using a cutter, cut the lead at the source.
(Cut the contents with the cutter lightly 5 or 6 times.)



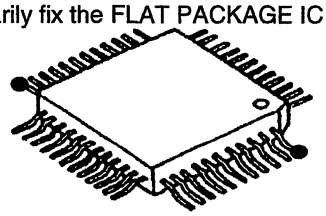

3) Remove when the solder melts.
(Remove the lead at the same time.)



After removing the Flat IC and when attaching the new IC, remove any of the excess solder on the land using the soldering wire, etc. If the excess solder is not removed from the land, the IC will slip and not be attached properly.

### 3. FLAT PACKAGE IC INSTALLATION PROCEDURE

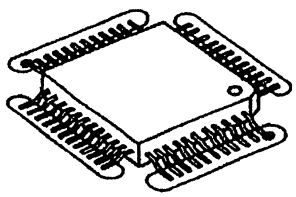
1) Temporarily fix the FLAT PACKAGE IC by soldering on the two marked pins.



● - - - - - -Temporary soldering point.

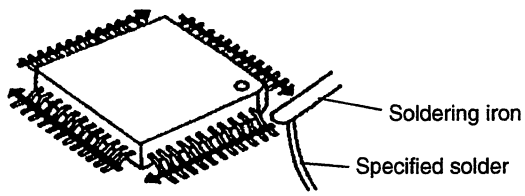
*Check the accuracy of the IC setting with the corresponding soldering foil.

2) Apply flux to all pins of the FLAT PACKAGE IC.



- - - - - - Flux

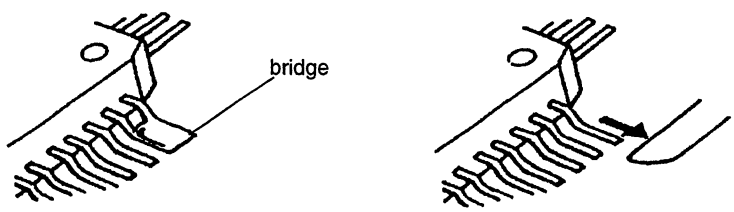
3) Solder using the specified solder, in the direction of the arrow, by sliding the soldering iron.




### 4. BRIDGE MODIFICATION PROCEDURE

1) Lightly re-solder the bridged portion.

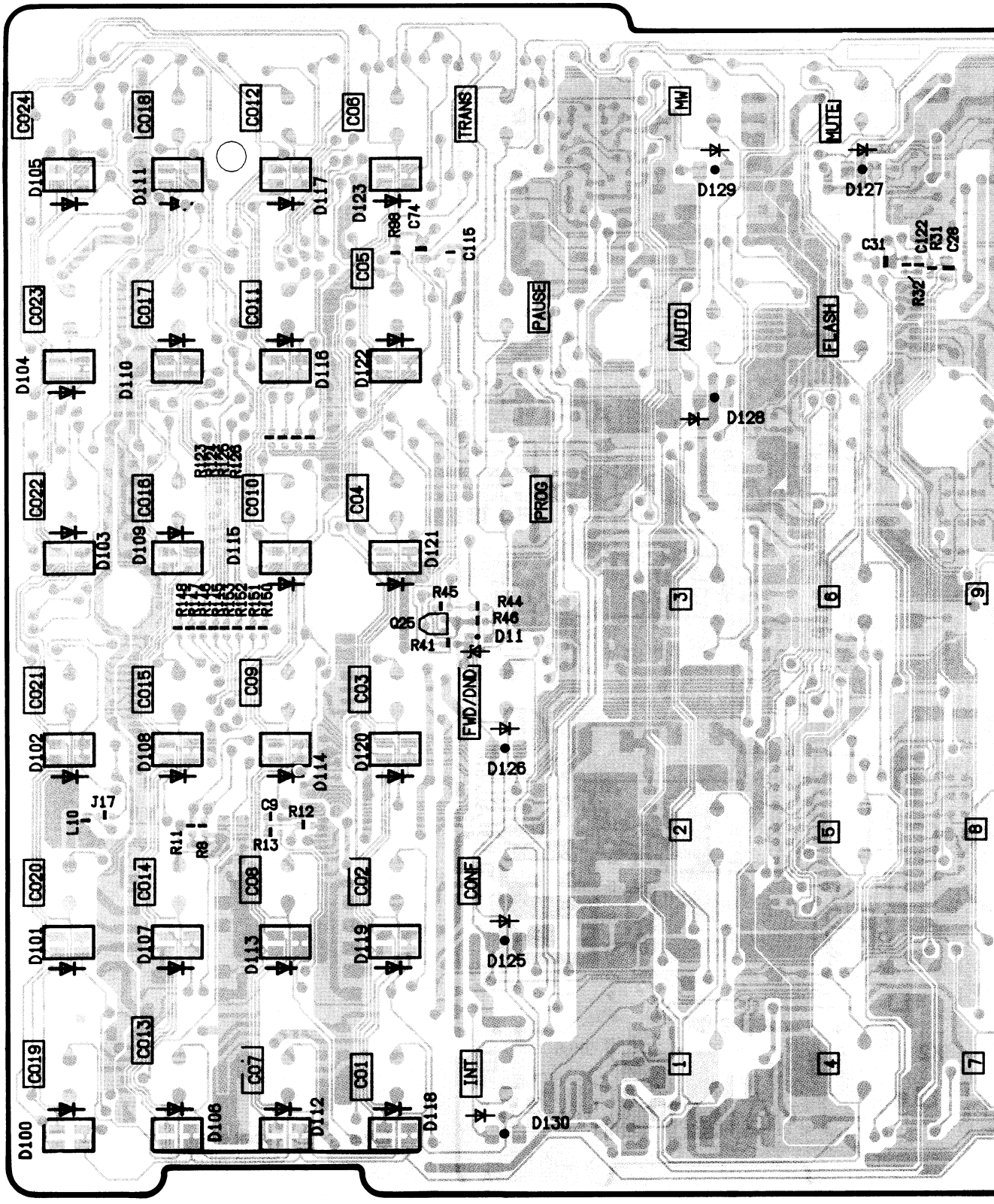
2) Remove the remaining solder along the pins using a soldering iron as shown in the figure below.



# MEMO

# PRINTED CIRCUIT BOARD

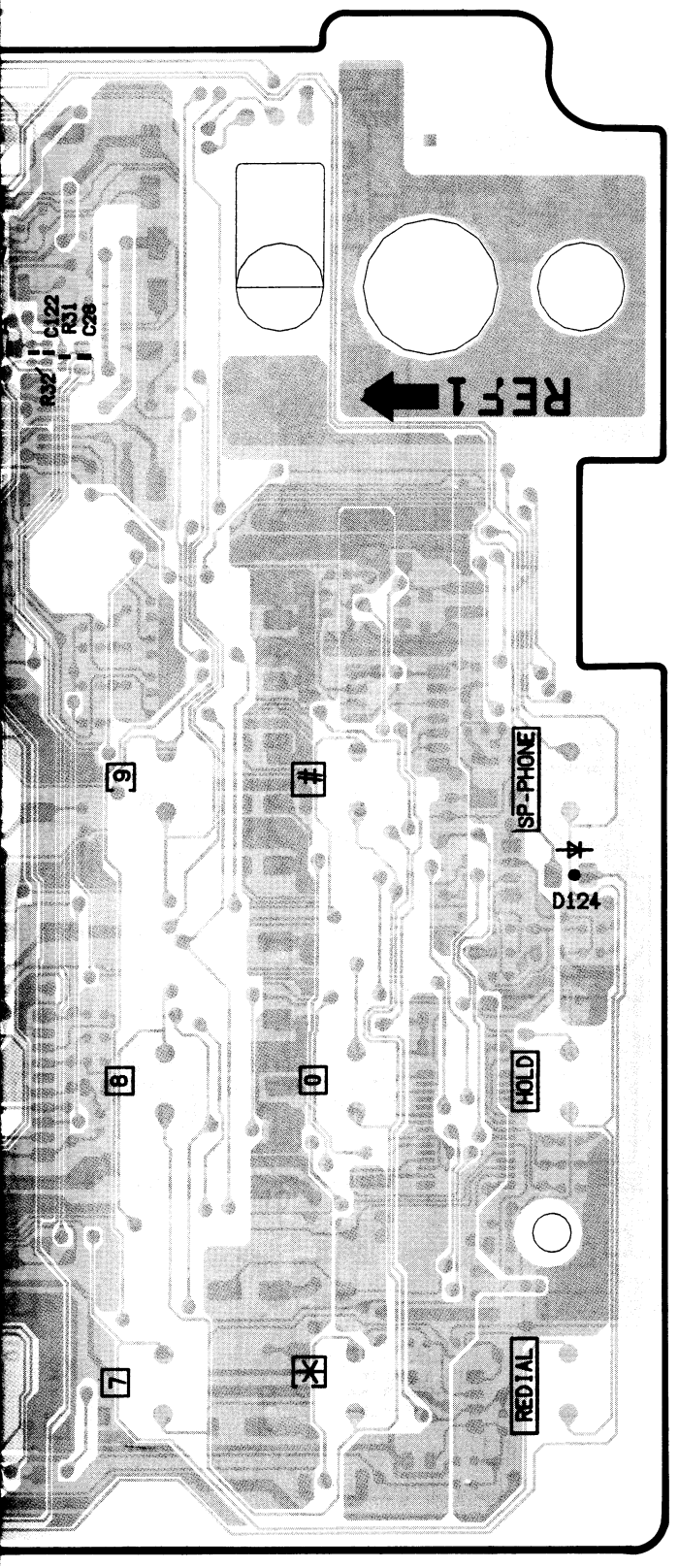
(BOTTOM V



# BOARD (MAIN BOARD)

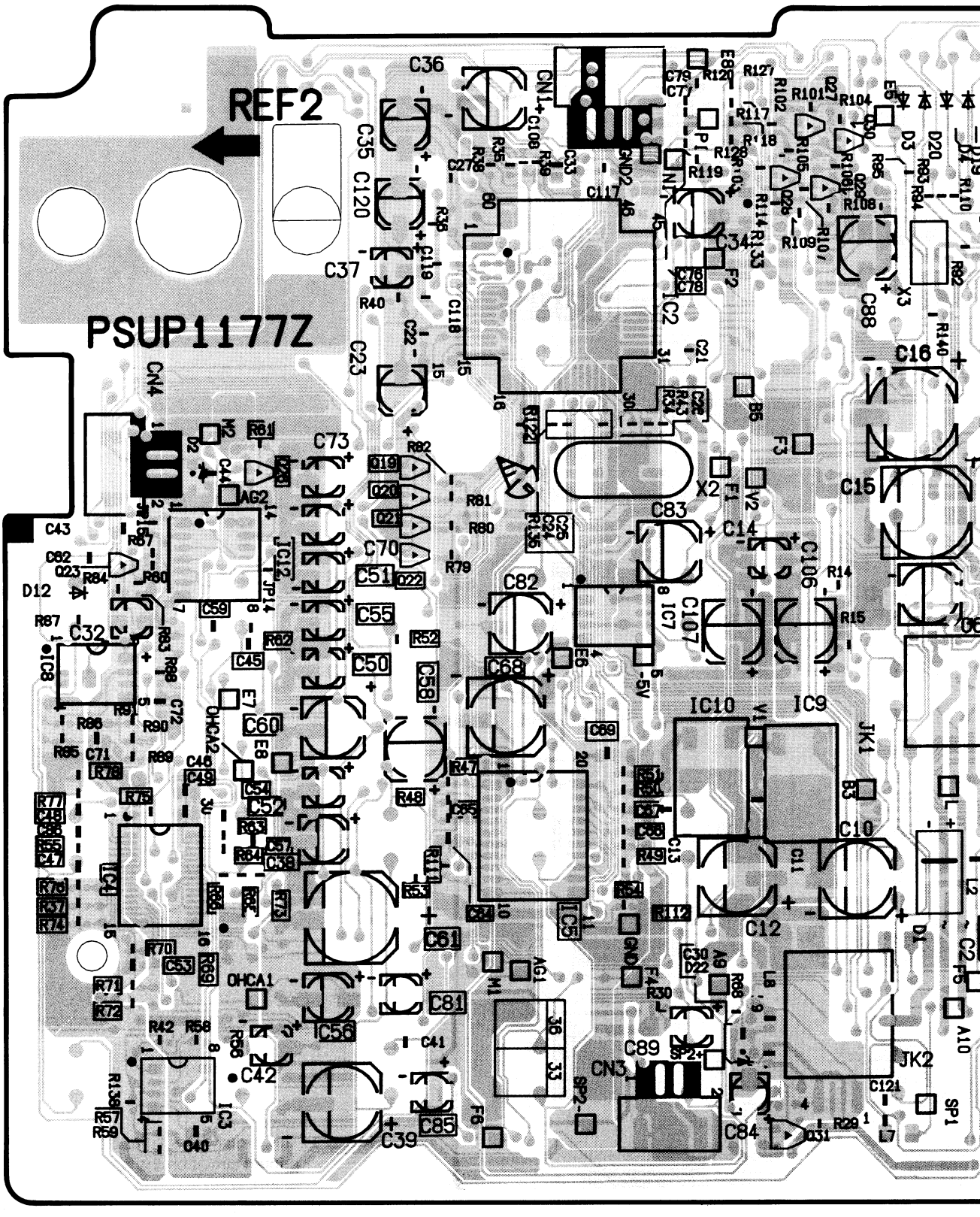
7 8 9 10 11 12

(BOTTOM VIEW)




**Notes:** 1. The circuit shown in ▭ on the conductor indicates printed circuit on the back side of the printed circuit board.
2. The circuit shown in ▭ on the conductor indicates printed circuit on the front side of the printed circuit board.
3. This printed circuit board may be modified at any time with the development of new technology.

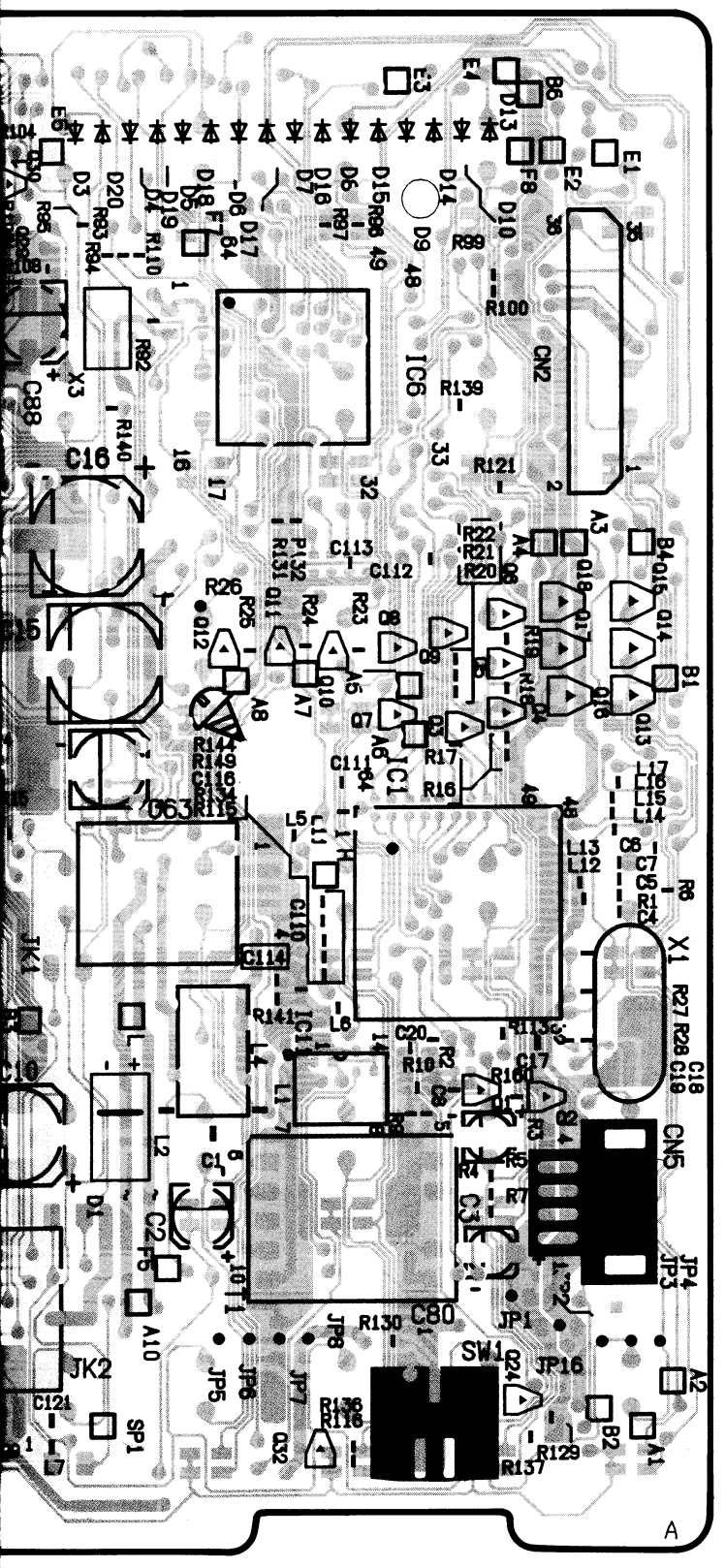
(COMPONENT VIEW



# CUIT BOARD (MAIN BOARD)

6 | 7 | 8 | 9 | 10 | 11 | 12

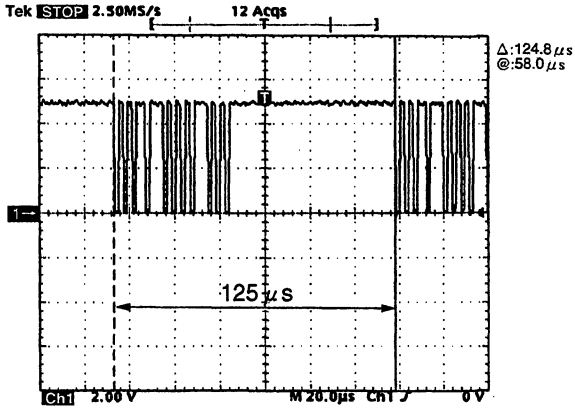
(PONENT VIEW)



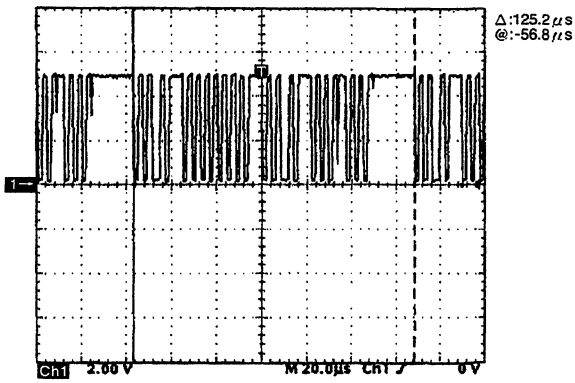

**Notes:** 1. The circuit shown in ▭ on the conductor indicates printed circuit on the back side of the printed circuit board.
2. The circuit shown in ▭ on the conductor indicates printed circuit on the front side of the printed circuit board.
3. This printed circuit board may be modified at any time with the development of new technology.

# WAVEFORM

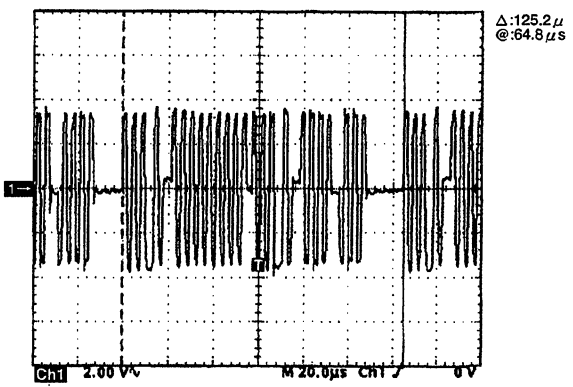
① TX DATA TRANSFER



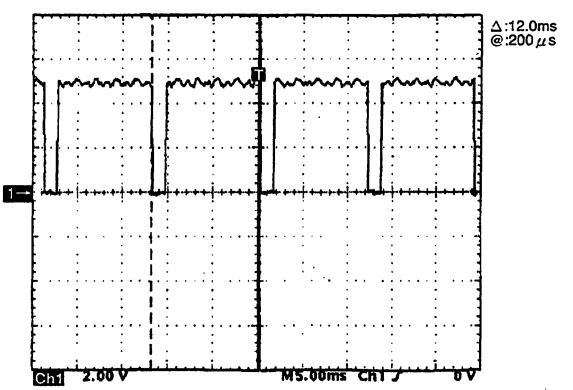

② RX DATA TRANSFER



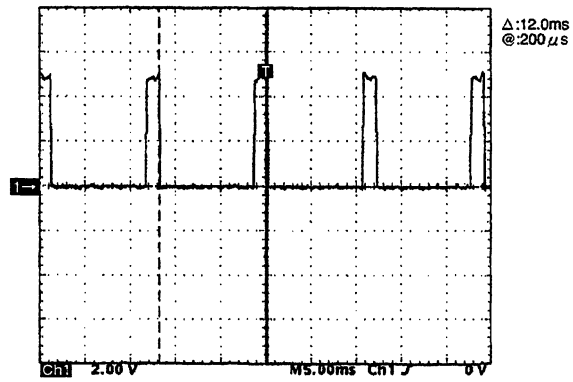

③ H-L DATA



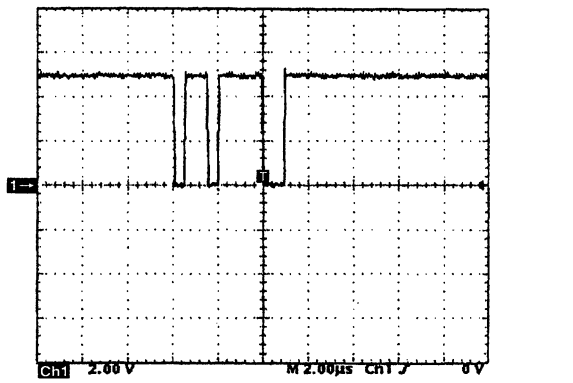

④ LED COTROL DATA



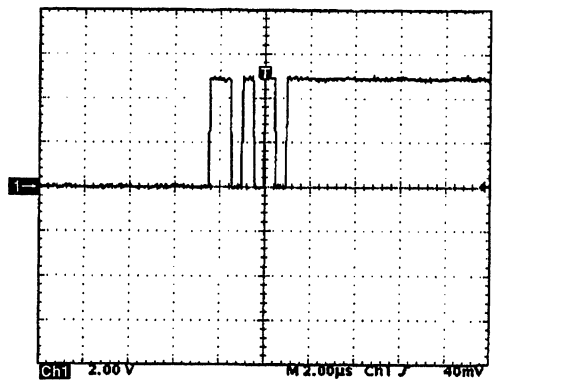

⑤ LED CONTROL DATA



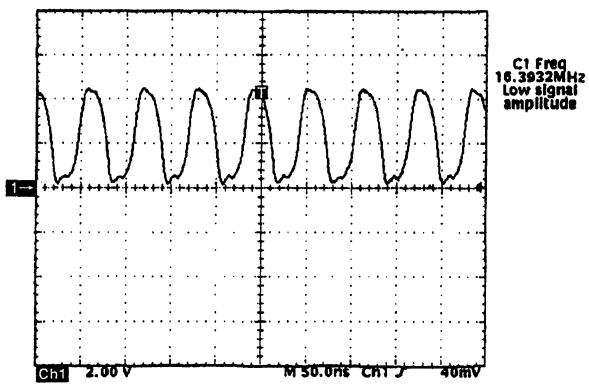

⑥ RX VOICE SERIAL DATA
(VOICE DATA ON)



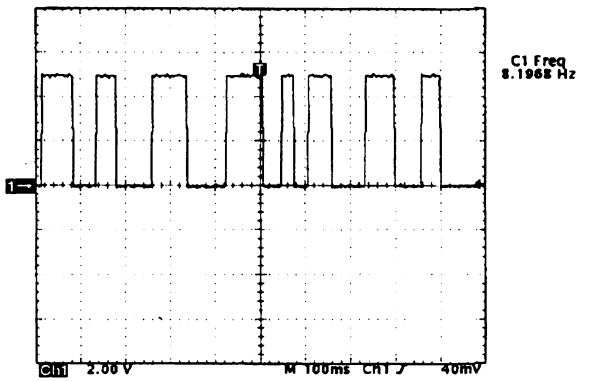

⑦ TX VOICE SERIAL DATA
(VOICE DATA ON)



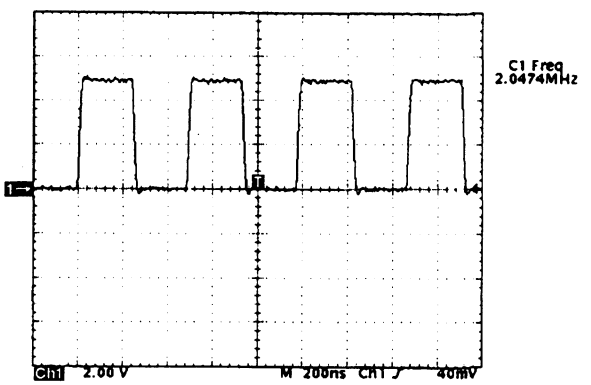

⑧ 16.38MHz CRYSTAL OUTPUT



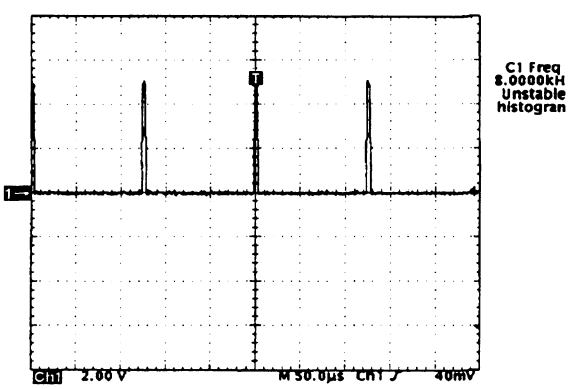
⑨ JOG DIAL
(JOG OPERATION)




⑩ CK2M

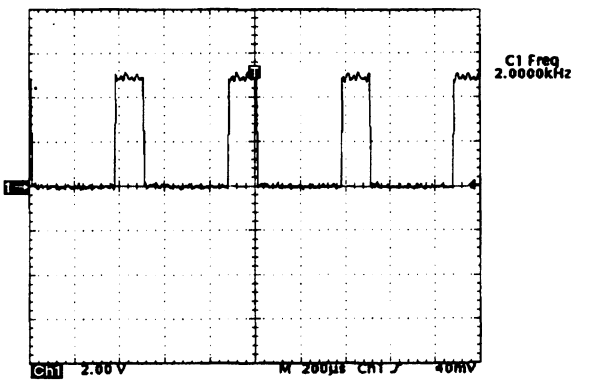



⑪ EP2

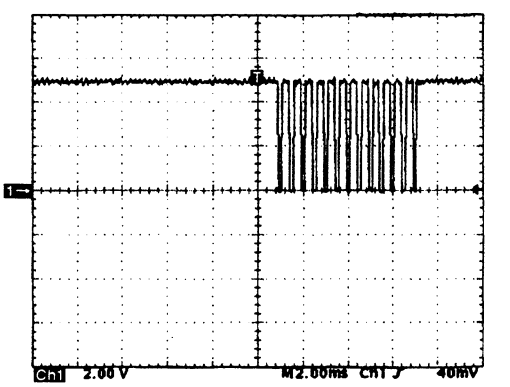



⑫ Not used

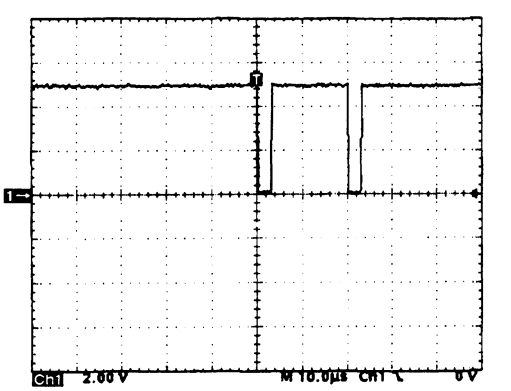
⑬ CK2K



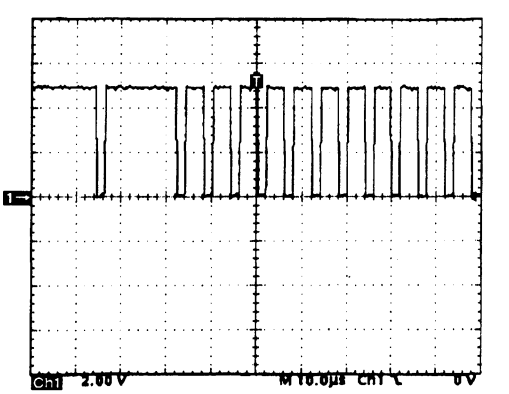

⑭ INT



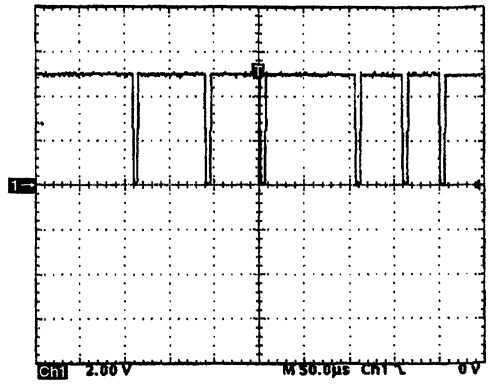

⑮ IOR



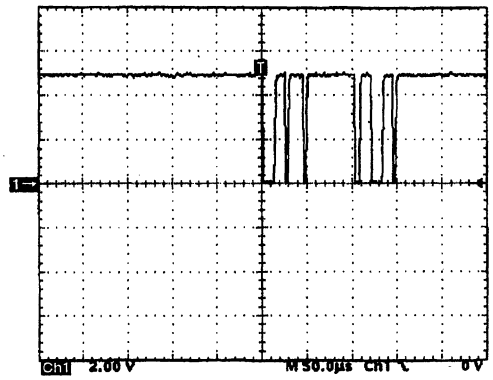

⑯ IOW



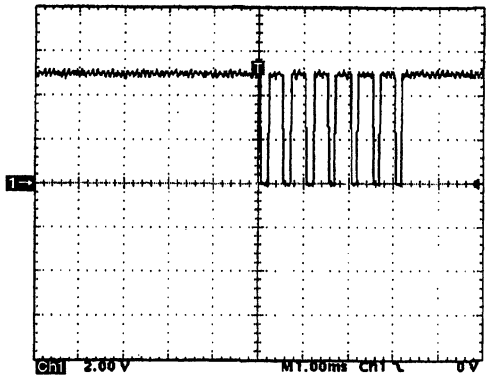
⑰ A0 ~ A1




⑱ D0 ~ D3

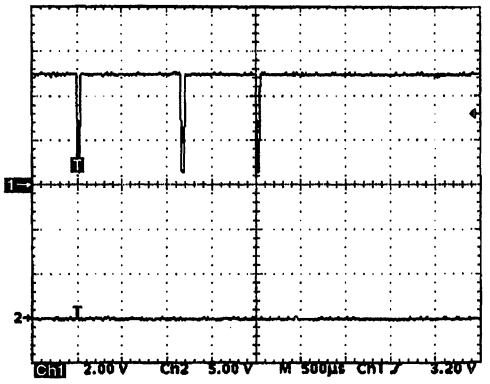



⑲ INT2

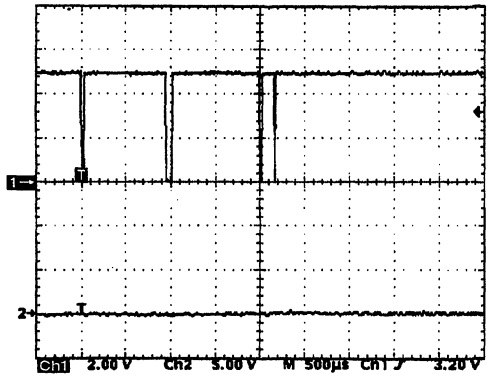



⑳ Not used

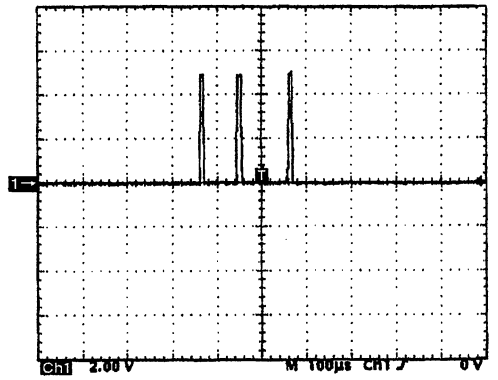
㉑ KEY INPUT SIGNAL
(KEY ON , KEY OFF:5V)



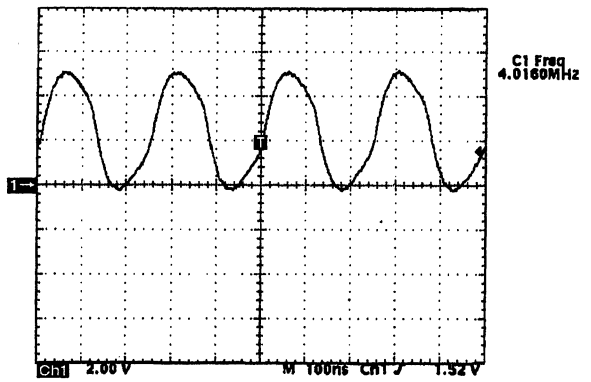

㉒ KEY CONTROL SIGNAL



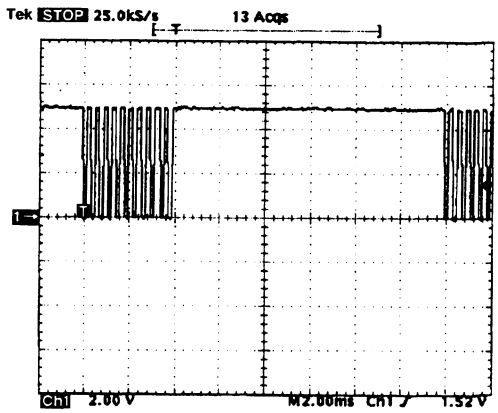

㉓ LCD DATA



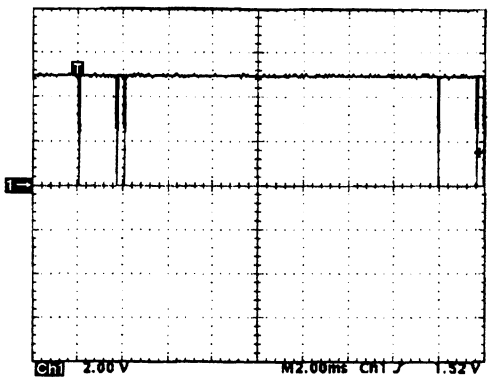

㉔ 4MHz CLOCK



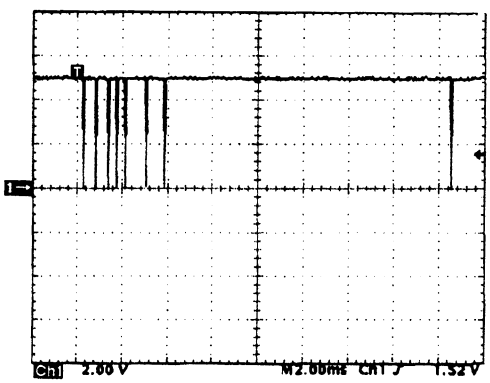
㉝ ALE



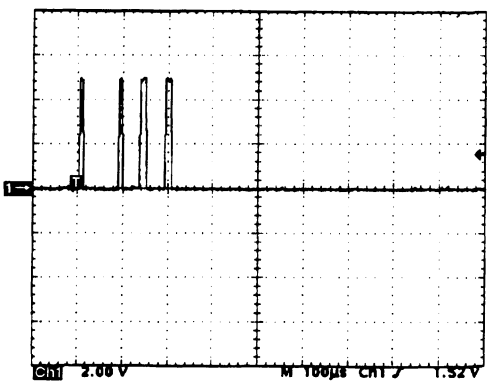

㉞ INT




㉟ -WR/STB

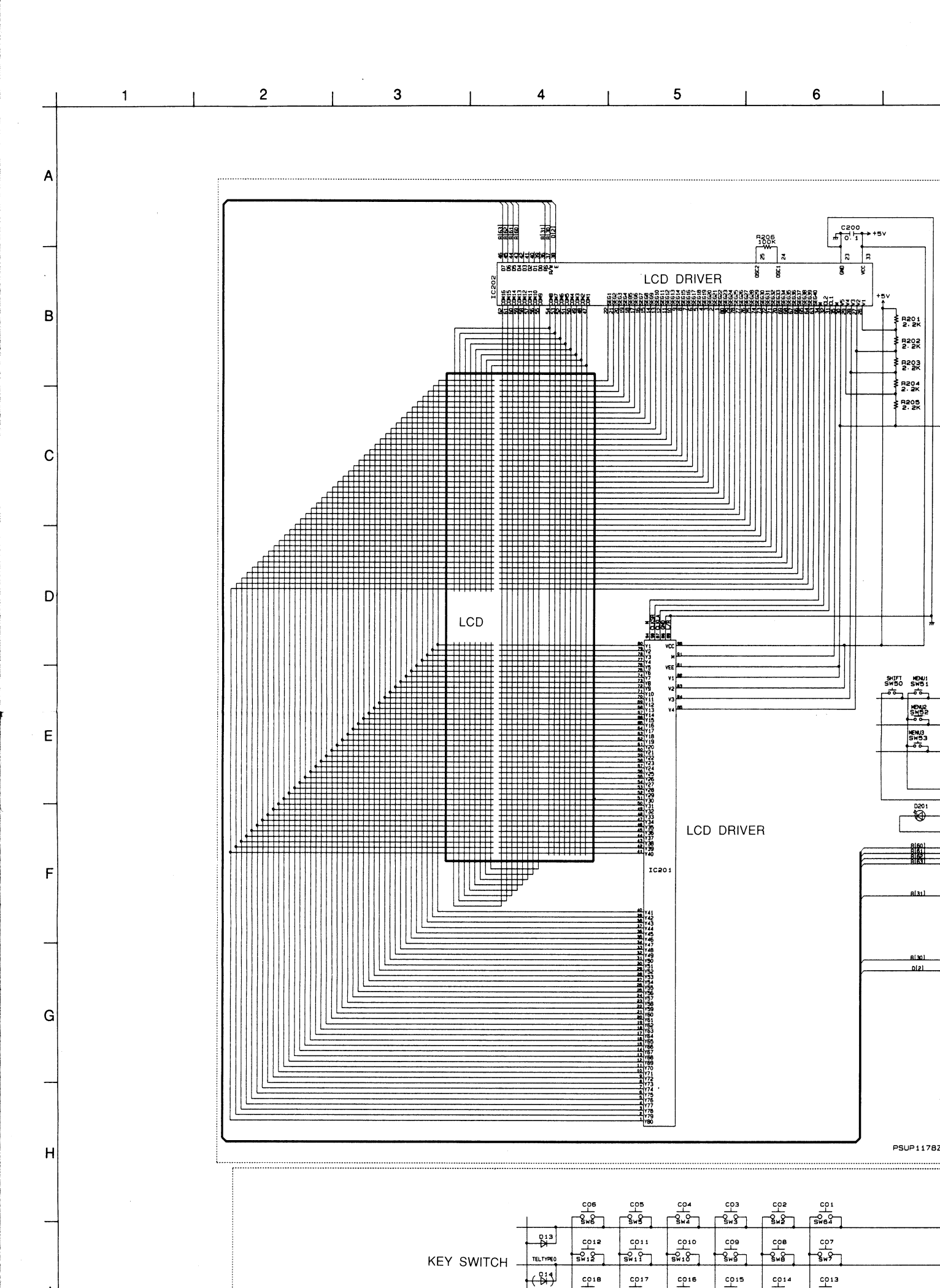



㊱ -RD/SD0

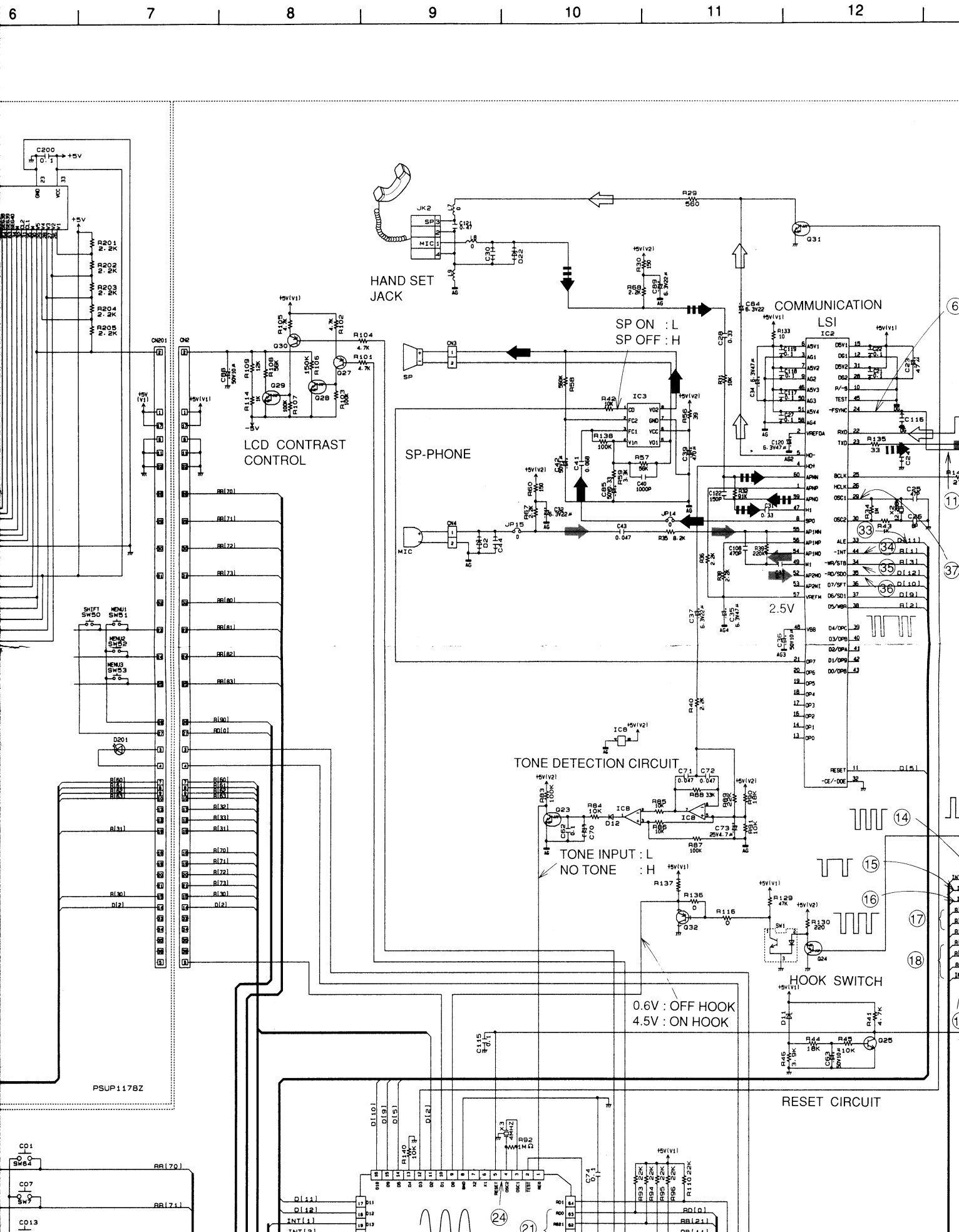



**Note:**

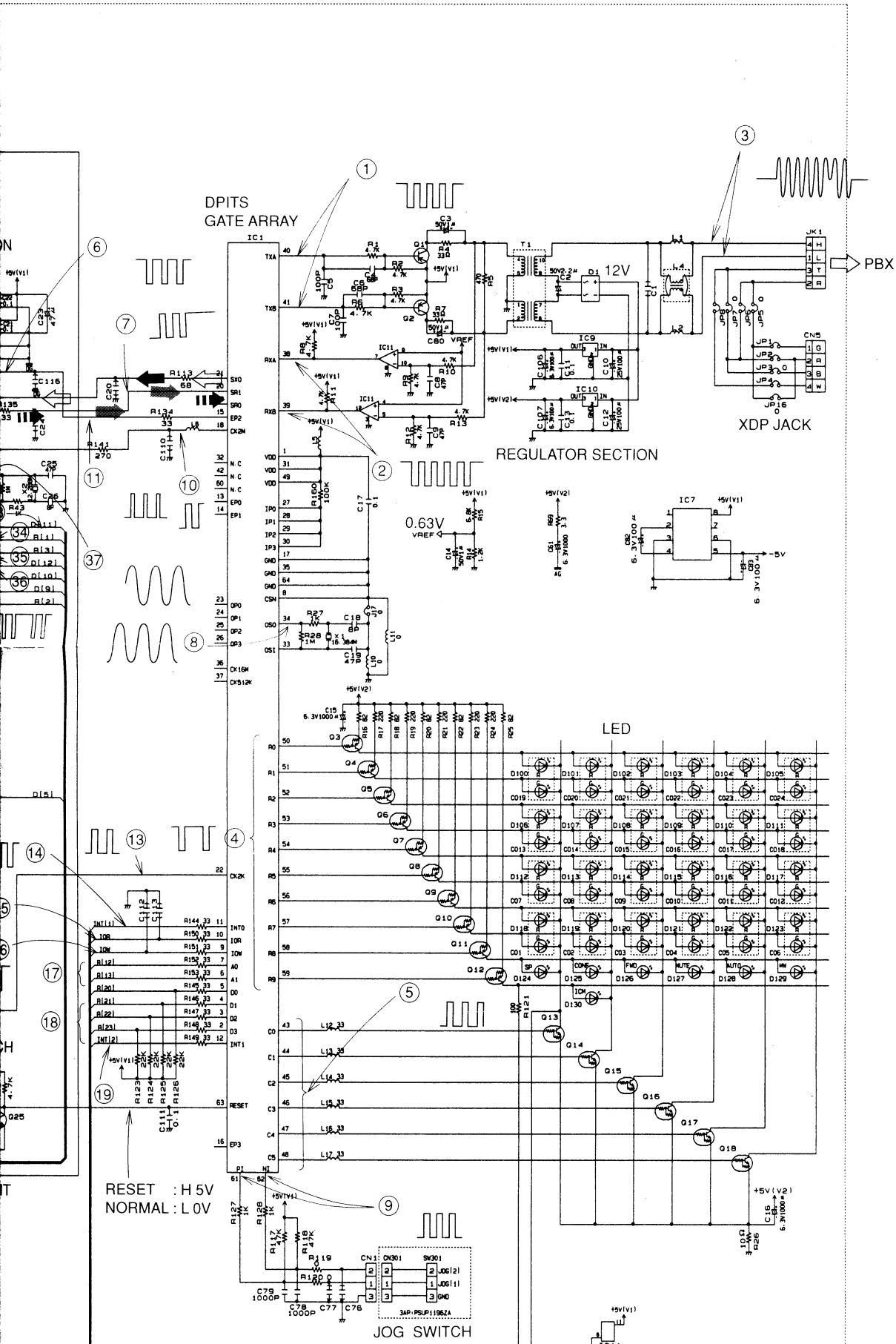
㉕ ~ ㉜ Not used

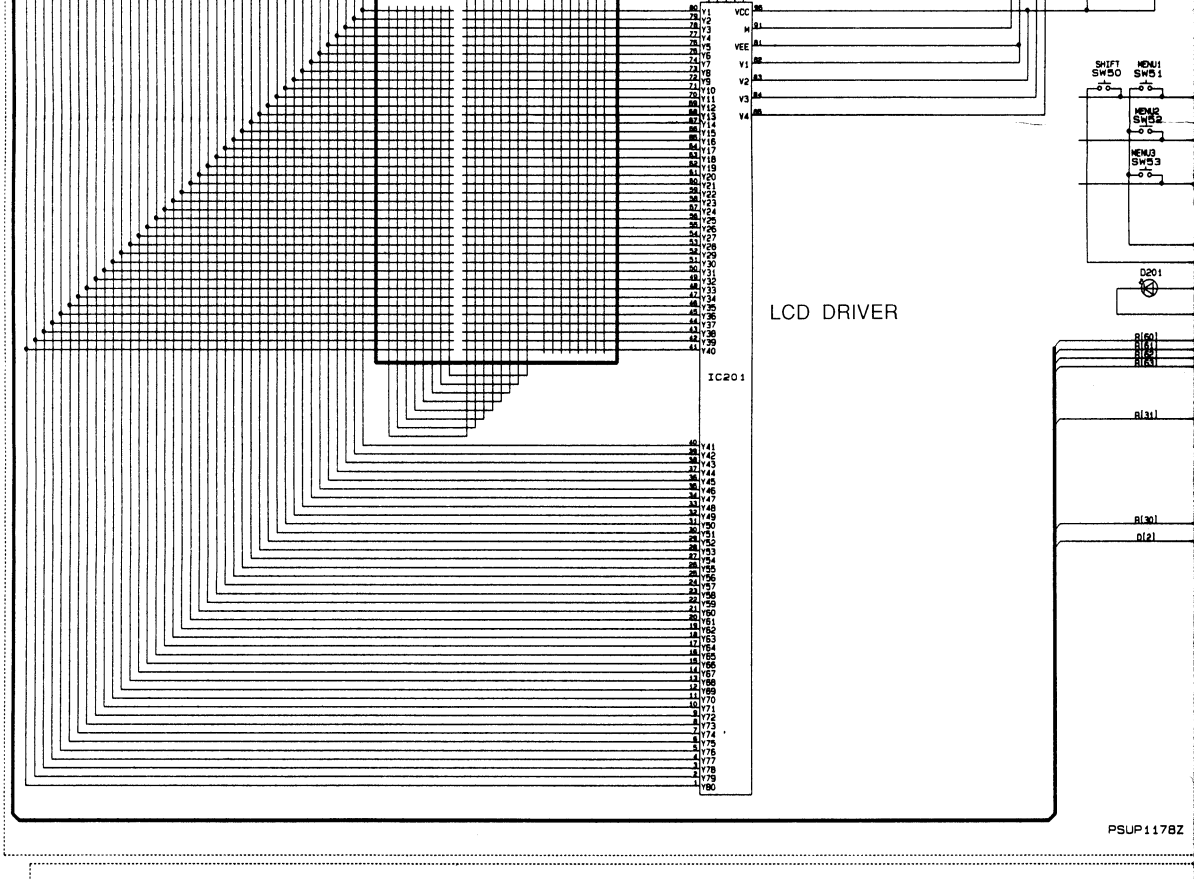

LCD DRIVER
LCD
LCD DRIVER
KEY SWITCH
PSUP1178Z

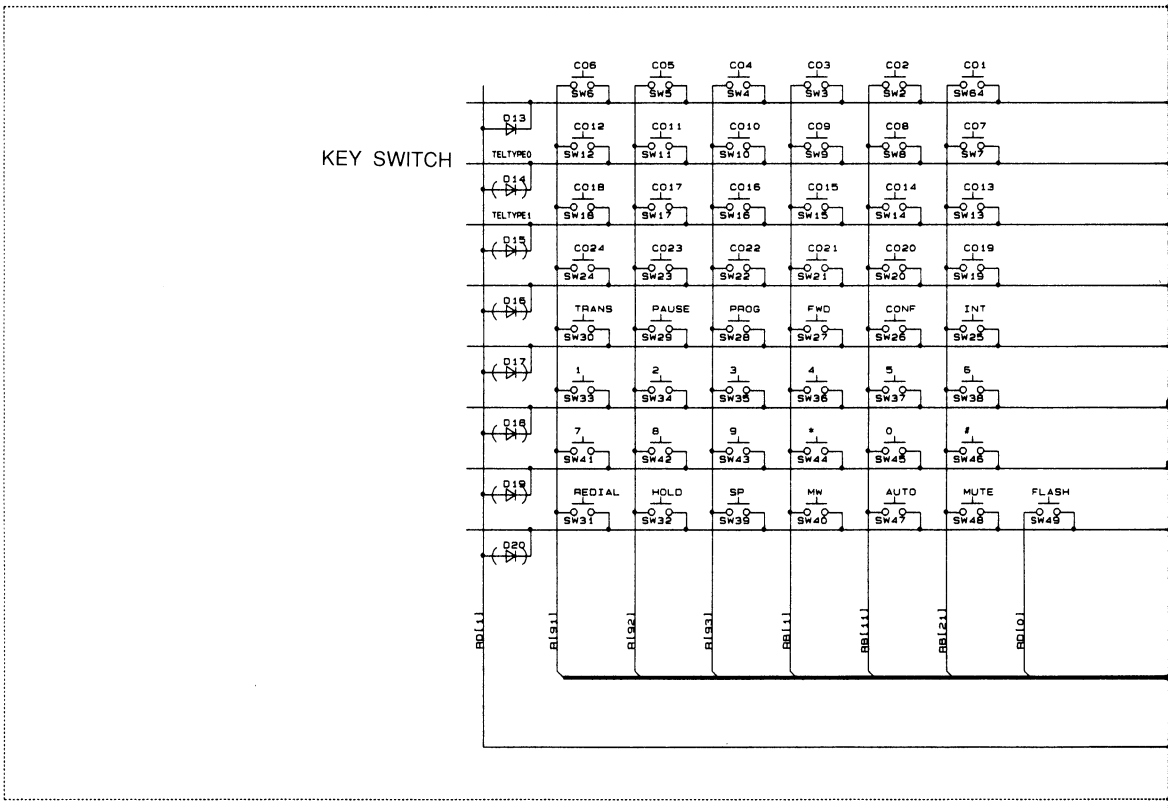
# SCHEMATIC DIAGRAM



13 14 15 16 17 18



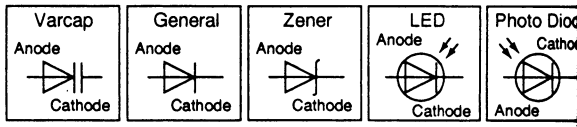


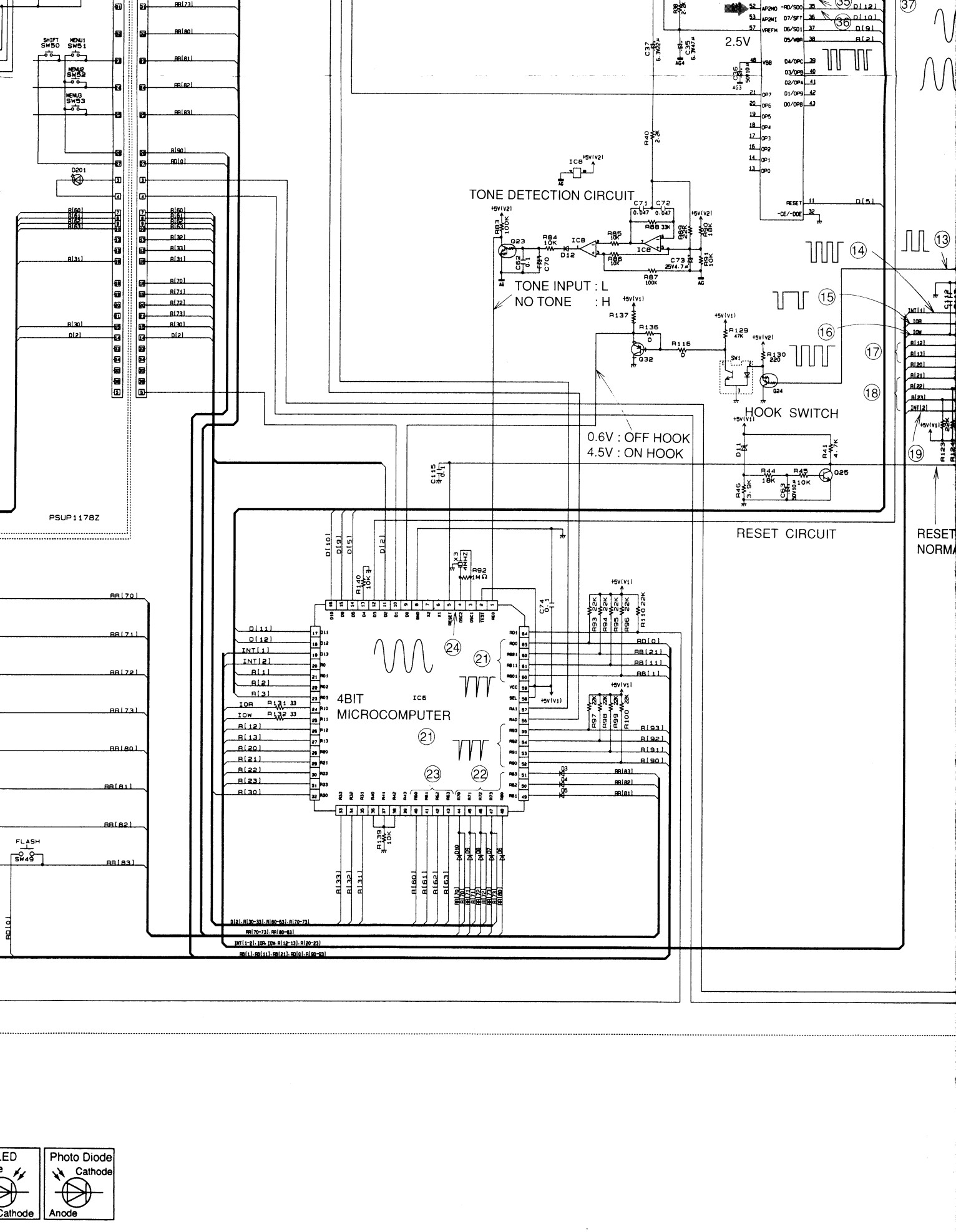




**Notes:**

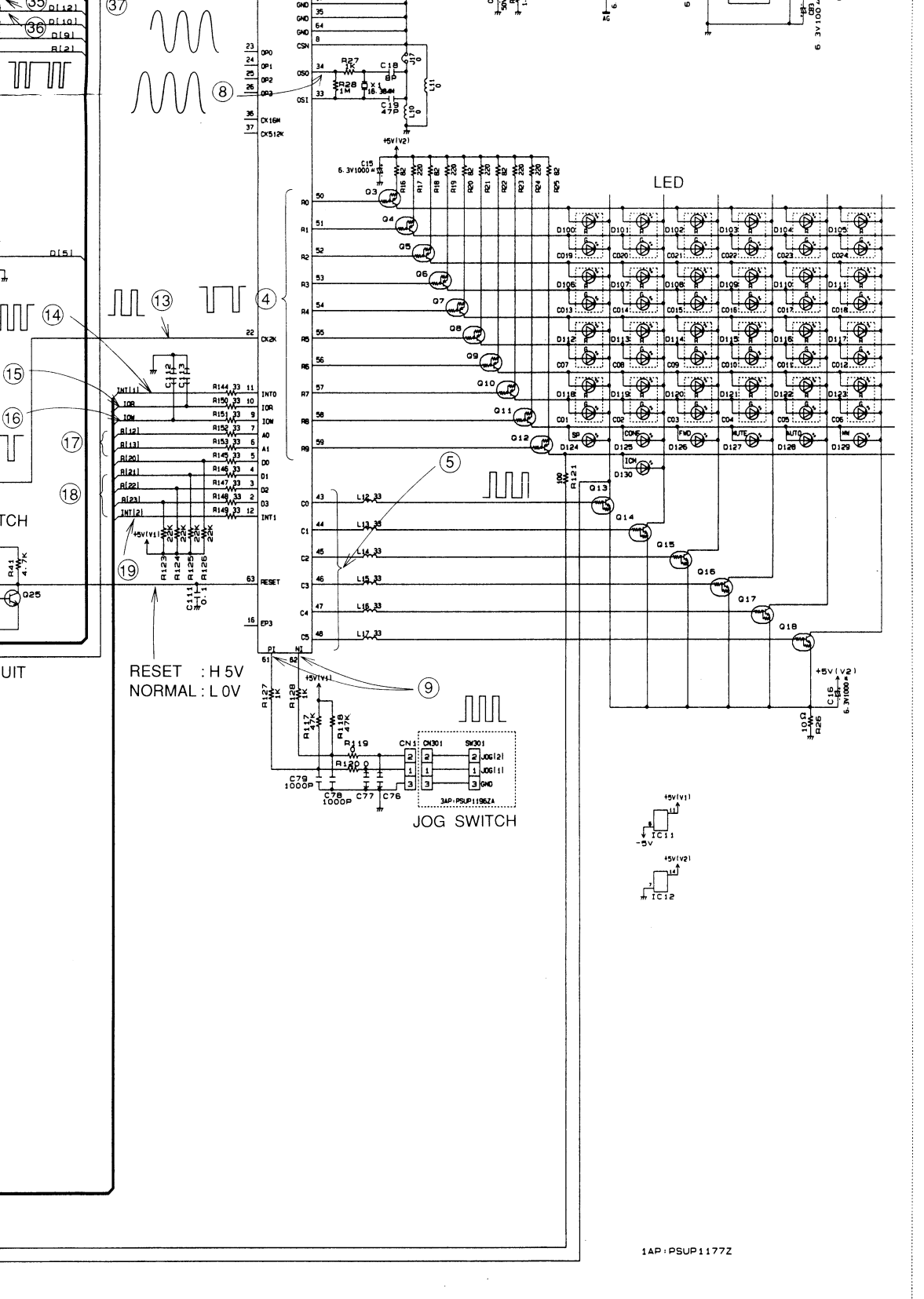
1. DC voltage measurements are taken with oscilloscope from ground line.
   (Waiting condition)
2. The schematic diagram may be modified at any time with the development of new technology.

3.




TONE DETECTION CIRCUIT
TONE INPUT : L
NO TONE : H
HOOK SWITCH
0.6V : OFF HOOK
4.5V : ON HOOK
RESET CIRCUIT
4BIT
MICROCOMPUTER
IC6
2.5V
PSUP1178Z
FLASH
SHIFT SW50
MENU1 SW51
MENU2 SW52
MENU3 SW53
D201


LED
Cathode
Photo Diode
Cathode
Anode

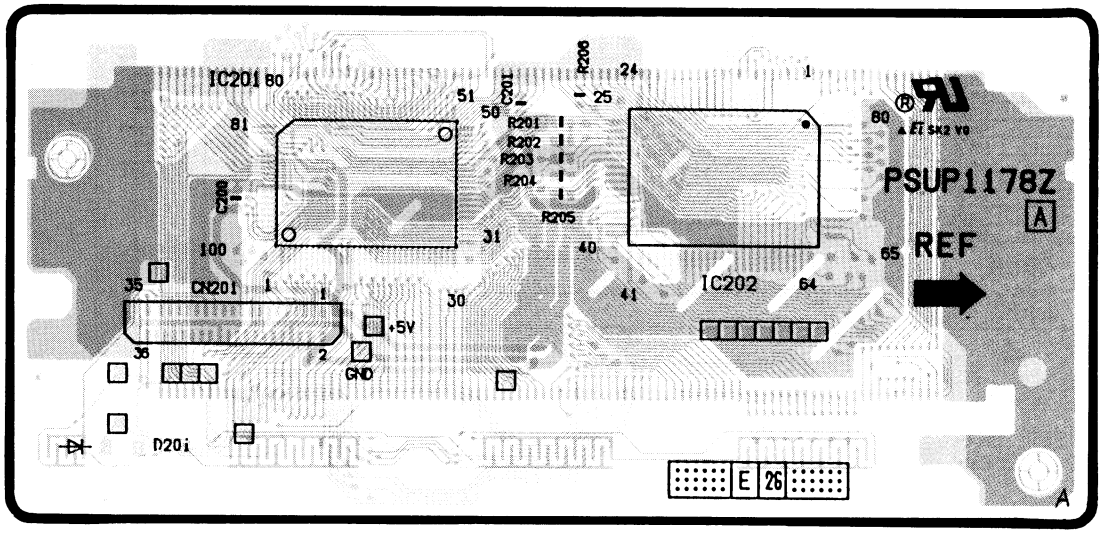


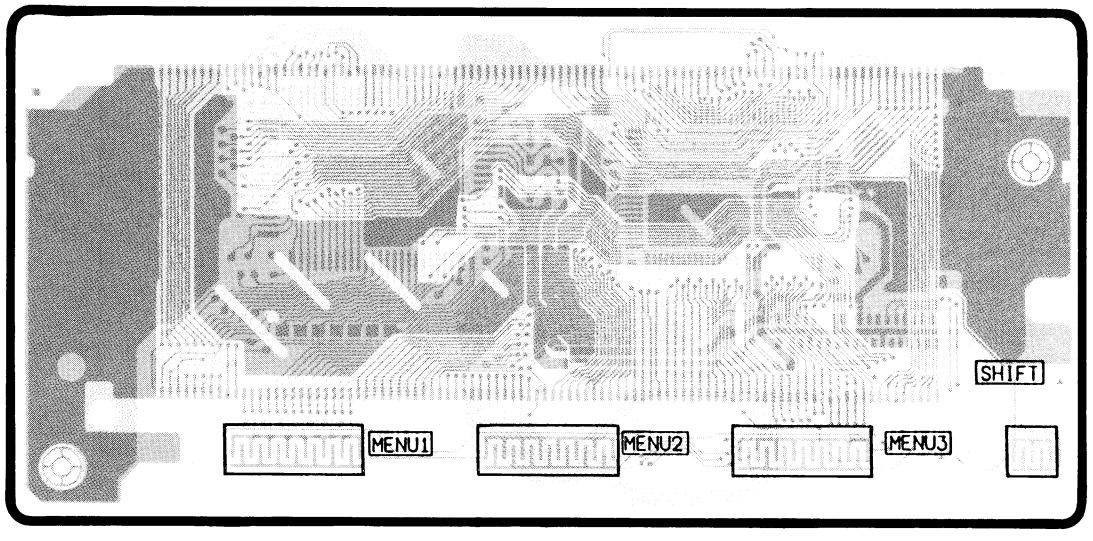

SP-PHONE RECEPTION

SP-PHONE TRANSMISSION

HANDSET RECEPTION

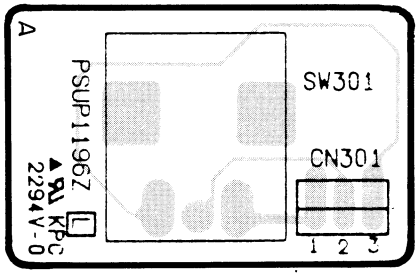
HANDSET TRANSMISSION


IC201
80
81
51
50
C201
R206
24
25
1
R201
R202
R203
R204
R205
C202
100
31
40
65
REF
PSUP1178Z
A
35
CN201
1
30
41
IC202
64
+5V
GND
36
2
D201
E
26
A

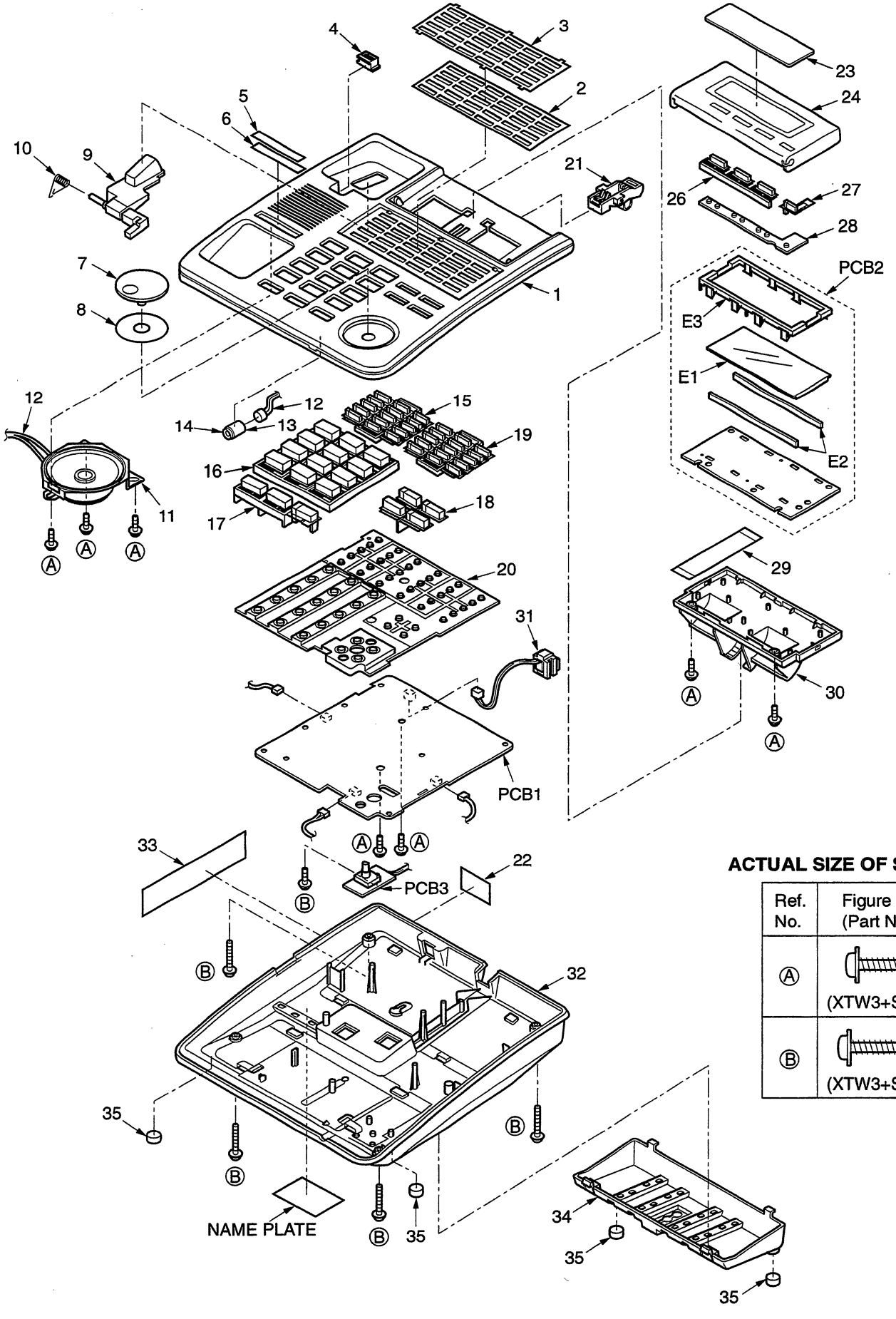

SHIFT
MENU1
MENU2
MENU3

# CIRCUIT BOARD

7 8 9 10 11 12



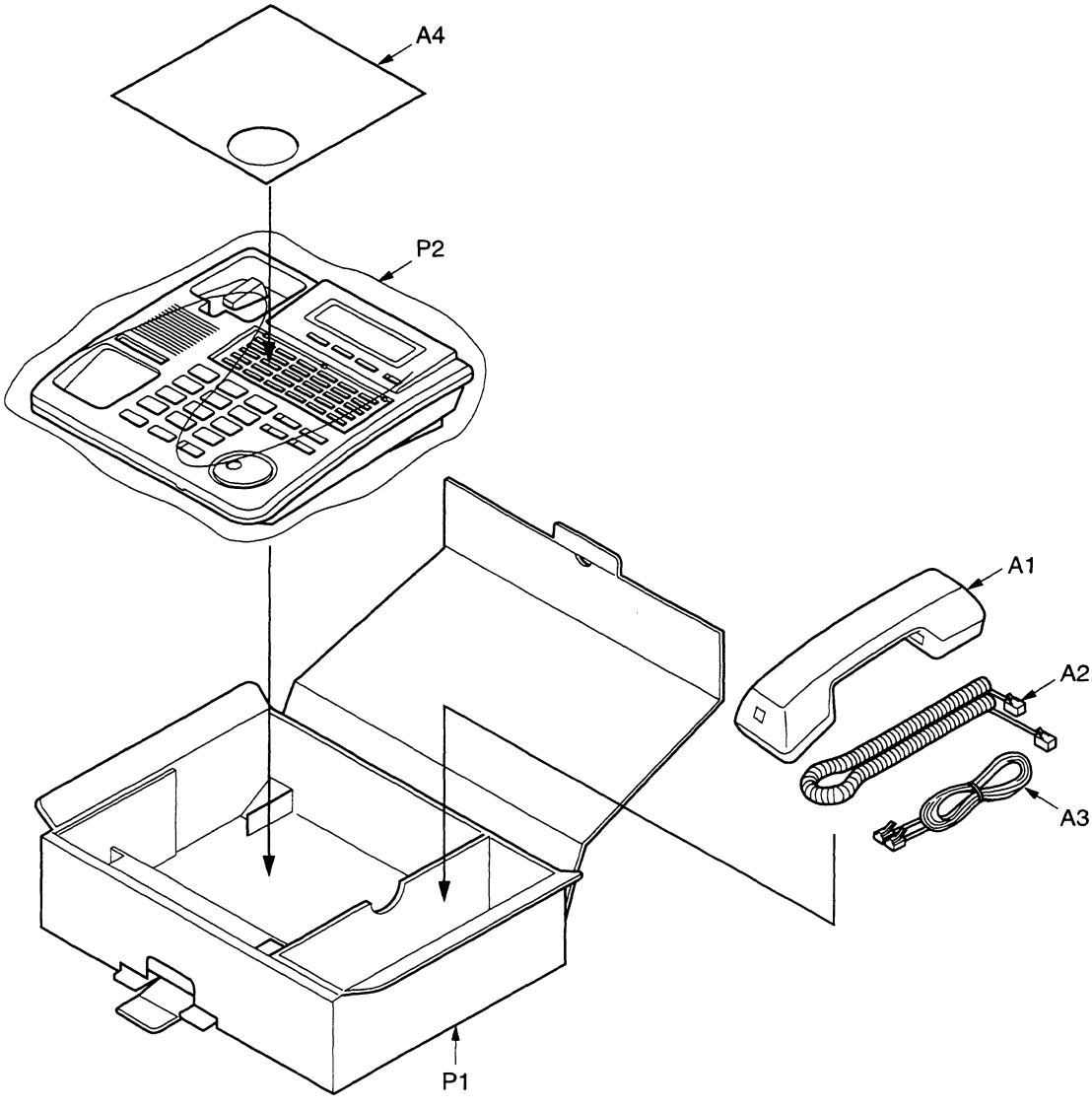
# CABINET AND ELECTRICAL PARTS LOCATION




**ACTUAL SIZE OF SCREWS**

| Ref. No. | Figure (Part No.) |
|---|---|
| Ⓐ | (XTW3+S10P) |
| Ⓑ | (XTW3+S14P) |

# ACCESSORIES AND PACKING MATERIALS



**This replacement parts list is for KX-T7433C/T7433C-B only.** Refer to the simplified manual (cover) for other areas.

## REPLACEMENT PARTS LIST

Model KX-T7433C/KX-T7433C-B

Notes:

1. The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.
2. The S mark indicates service standard parts and may differ from production.
3. RESISTORS & CAPACITORS
   Unless otherwise specified.
   All resistors are in ohms( Ω ) k=l000Ω,M=l000kΩ
   All capacitors are in MICRO FARADS( μF ) P=μμF
   *Type &Wattage of Resistor
   Type

| | | |
|---|---|---|
| ERC:Solid | ERX:Metal Film | PQ4R:Carbon |
| ERD:Carbon | ERG:Metal Oxide | ERS:Fusible Resistor |
| PQRD:Carbon | ER0:Metal Film | ERF:Cement Resistor |

Wattage

| | | | | | |
|---|---|---|---|---|---|
| 10,16:1/8W | 14,25:1/4W | 12:1/2W | 1:1W | 2:2W | 3:3W |

*Type & Voltage of Capacitor
Type

| | |
|---|---|
| ECFD:Semi-Conductor | ECCD,ECKD,ECBT,PQCBC : Ceramic |
| ECQS:Styrol | ECQE,ECQV,ECQG : Polyster |
| PQCUV:Chip | ECEA,ECSZ : Electrolytic |
| ECQMS:Mica | ECQP : Polypropylene |

Voltage

| ECQ Type | ECQG ECQV Type | ECSZ Type | Others | |
|---|---|---|---|---|
| 1H: 50V | 05: 50V | 0F:3.15V | 0J :6.3V | 1V :35V |
| 2A:100V | 1:100V | 1A:10V | 1A :10V | 50,1H:50V |
| 2E:250V | 2:200V | 1V:35V | 1C :16V | 1J :63V |
| 2H:500V | | 0J:6.3V | 1E,25:25V | 2A :100V |

| Ref. No. | Part No. | Part Name & Description | | Pcs |
|---|---|---|---|---|
| | | CABINET AND ELECTRICAL PARTS | | |
| 1 | PSKM1052Z1 | CABINET BODY (KX-T7433C) | | 1 |
| 1 | PSKM1052Z2 | CABINET BODY (KX-T7433C-B) | | 1 |
| 2 | PSGD1026Z | CARD, DIAL (KX-T7433C) | | 1 |
| 2 | PSGD1033Z | CARD, DIAL (KX-T7433C-B) | | 1 |
| 3 | PSHR1134Z | TRANSPARENT PLATE | | 1 |
| 4 | PQKE82X1 | HANGER (KX-T7433C) | | 1 |
| 4 | PQKE82X3 | HANGER (KX-T7433C-B) | | 1 |
| 5 | PQHR576Z | TRANSPARENT PLATE | | 1 |
| 6 | PQHP532X | CARD, TEL. NO. | | 1 |
| 7 | PSBC1012Z1 | BUTTON, JOG DIAL (KX-T7433C) | | 1 |
| 7 | PSBC1012Z2 | BUTTON, JOG DIAL (KX-T7433C-B) | | 1 |
| 8 | PSHR1164Z | SPACER | | 1 |
| 9 | PSBH1002Z1 | BUTTON, HOOK (KX-T7433C) | | 1 |
| 9 | PSBH1002Z2 | BUTTON, HOOK (KX-T7433C-B) | | 1 |
| 10 | PSUS1006Z | SPRING | | 1 |
| 11 | PQAS65P28Z | SPEAKER | | 1 |
| 12 | PSJS02Q35Z | CONNECTOR | | 2 |
| 13 | RJM142Z | MICROPHONE | S | 1 |
| 14 | PSHG1122Z | RUBBER PARTS, MIC COVER | | 1 |
| 15 | PSBX1041Z1 | BUTTON, 15KEY (KX-T7433C) | | 1 |
| 15 | PSBX1041Z2 | BUTTON, 15KEY (KX-T7433C-B) | | 1 |
| 16 | PSBX1039Z1 | BUTTON, DIAL (KX-T7433C) | | 1 |
| 16 | PSBX1039Z2 | BUTTON, DIAL (KX-T7433C-B) | | 1 |
| 17 | PSYX1001Z1 | BUTTON, 3KEY (KX-T7433C) | | 1 |
| 17 | PSYX1001Z2 | BUTTON, 3KEY (KX-T7433C-B) | | 1 |
| 18 | PSBX1042Z1 | BUTTON, 4KEY (KX-T7433C) | | 1 |
| 18 | PSBX1042Z2 | BUTTON, 4KEY (KX-T7433C-B) | | 1 |
| 19 | PSBX1052Z1 | BUTTON, 15KEY (KX-T7433C) | | 1 |
| 19 | PSBX1052Z2 | BUTTON, 15KEY (KX-T7433C-B) | | 1 |
| 20 | PSSX1006Z | KEY SWITCH | | 1 |
| 21 | PSBE1002Z1 | BUTTON, ADJUST (KX-T7433C) | | 1 |
| 21 | PSBE1002Z2 | BUTTON, ADJUST (KX-T7433C-B) | | 1 |
| 22 | PQQT11166Z | LABEL, NOTE | | 1 |
| 23 | PSGP1024Z1 | PANEL, LCD (KX-T7433C) | | 1 |
| 23 | PSGP1024Z2 | PANEL, LCD (KX-T7433C-B) | | 1 |
| 24 | PSGG1005Z1 | GRILLE (KX-T7433C) | | 1 |
| 24 | PSGG1005Z2 | GRILLE (KX-T7433C-B) | | 1 |
| 25 | Not Used | | | |
| 26 | PSBX1044Z1 | BUTTON, 3KEY (KX-T7433C) | | 1 |
| 26 | PSBX1044Z2 | BUTTON, 3KEY (KX-T7433C-B) | | 1 |
| 27 | PSBC1013Z1 | BUTTON, SHIFT (KX-T7433C) | | 1 |
| 27 | PSBC1013Z2 | BUTTON, SHIFT (KX-T7433C-B) | | 1 |
| 28 | PSSX1007Z | KEY SWITCH | | 1 |
| 29 | PSJE1011Z | FLAT CABLE | | 1 |
| 30 | PSKF1025Z1 | CABINET, GRILL LOWER (KX-T7433C) | | 1 |
| 30 | PSKF1025Z2 | CABINET, GRILL LOWER (KX-T7433C-B) | | 1 |
| 31 | PSJJ1T017Z | JACK, TEL. | | 1 |
| 32 | PSKF1024Z1 | CABINET, LOWER (KX-T7433C) | | 1 |
| 32 | PSKF1024Z2 | CABINET, LOWER (KX-T7433C-B) | | 1 |
| 33 | PSQT1309X | LABEL, CAUTION (KX-T7433C) | | 1 |
| 33 | PSQT1309W | LABEL, CAUTION (KX-T7433C-B) | | 1 |
| 34 | PSKL1005Z1 | STAND (KX-T7433C) | | 1 |
| 34 | PSKL1005Z2 | STAND (KX-T7433C-B) | | 1 |
| 35 | PSHA1002Z | RUBBER PARTS, FOOT | | 4 |
| | | ACCESSORIES AND PACKING MATERIALS | | |
| A1 | PQJX2PS409Z | HANDSET (KX-T7433C) | | 1 |
| A1 | PQJX2PM409Z | HANDSET (KX-T7433C-B) | | 1 |
| A2 | PSJA1043Z | CORD, HANDSET (KX-T7433C) | | 1 |
| A2 | PSJA1043Y | CORD, HANDSET (KX-T7433C-B) | | 1 |
| A3 | PQJA48W | CORD, TEL. | | 1 |
| A4 | PSGD1040Z | CARD, OVERLAY | | 1 |
| P1 | PSPK1361Z | GIFT BOX (KX-T7433C) | | 1 |
| P1 | PSPK1413Z | GIFT BOX (KX-T7433C-B) | | 1 |
| P2 | PQPP170Z | BAG,POLYETHYLENE | | 1 |
| | | MAIN BOARD PARTS | | |
| **PCB1** | **PSWP1T7433C** | **MAIN BOARD ASS'Y (RTL)** | | **1** |
| | | (ICs) | | |
| IC1 | PSVIBU65050D | IC | | 1 |
| IC2 | PSVITC5324F2 | IC | | 1 |
| IC3 | PQVIMC34119D | IC | | 1 |
| IC6 | PSVI40612A04 | IC | S | 1 |
| IC7 | PQVINJU7660M | IC | | 1 |
| IC8 | PQVINJM2904F | IC | S | 1 |
| IC9,10 | PSVIBA05FP | IC | | 2 |
| IC11 | PQVINJM319V | IC | | 1 |
| SW1 | PSVII24019T1 | IC | | 1 |
| | | (TRANSISTORS) | | |
| Q1,2 | 2SA1576Q | TRANSISTOR(SI) | | 2 |
| Q3-12 | PQVTDTA143XU | TRANSISTOR(SI) | | 10 |
| Q13-18 | PQVTDTD133HK | TRANSISTOR(SI) | | 6 |
| Q23 | UN5213 | TRANSISTOR(SI) | S | 1 |
| Q24 | PQVTDTA143XU | TRANSISTOR(SI) | | 1 |
| Q25 | 2SC4081Q | TRANSISTOR(SI) | | 1 |
| Q27 | 2SA1576Q | TRANSISTOR(SI) | | 1 |
| Q28,29 | UN5213 | TRANSISTOR(SI) | S | 2 |
| Q30 | 2SA1576Q | TRANSISTOR(SI) | | 1 |
| Q31 | PQVTFB1J3P | TRANSISTOR(SI) | | 1 |
| | | (DIODES) | | |
| D1 | PQVDS1ZB60F1 | DIODE(SI) | | 1 |
| D3-10 | RLS71 | DIODE(SI) | | 8 |
| D11 | PSVDUDZ39B | DIODE(SI) | | 1 |
| D12,13 | RLS71 | DIODE(SI) | | 2 |
| D100-123 | PQVDPY1204 | LED | S | 24 |
| D124-129 | PQVDBR1102W | LED | S | 6 |
| D130 | PQVDPY1102 | LED | | 1 |
| | | (CONNECTORS) | | |
| CN1 | PSJP03A05Z | CONNECTOR, 3P | | 1 |
| CN2 | PSJS36A61Z | CONNECTOR, 36P | | 1 |
| CN3,4 | PSJP02A05Z | CONNECTOR, 2P | | 2 |
| CN5 | PSJP04A05Z | CONNECTOR, 4P | | 1 |

**This replacement parts list is for KX-T7433C/T7433C-B only.** Refer to the simplified manual (cover) for other areas.

| Ref. No. | Part No. | Part Name & Description | | Pcs |
|---|---|---|---|---|
| | | (CAPACITORS) | | |
| C2 | ECEV1HA2R2N | 2.2 | | 1 |
| C3 | PSCEV1HA010 | 1 | | 1 |
| C4 | ECUV1H680JCV | 68P | | 1 |
| C5 | ECUV1H101JCV | 100P | | 1 |
| C6 | ECUV1H680JCV | 68P | | 1 |
| C7 | ECUV1H101JCV | 100P | | 1 |
| C8,9 | ECUV1H470JCV | 47P | | 2 |
| C10 | PSCEV1EA101 | 100 | | 1 |
| C11 | PQCUV1E104MD | 0.1 | S | 1 |
| C12 | PSCEV1EA101 | 100 | | 1 |
| C13 | PQCUV1E104MD | 0.1 | S | 1 |
| C14 | PSCEV1HA010 | 1 | | 1 |
| C15,16 | PSCEV0JA102 | 1000 | | 2 |
| C17 | PQCUV1E104MD | 0.1 | S | 1 |
| C18 | ECUV1H080DCV | 8P | | 1 |
| C19 | ECUV1H470JCV | 47P | | 1 |
| C21,22 | ECUV1H104ZFV | 0.1 | S | 2 |
| C23 | PSCEV0JA470 | 47 | | 1 |
| C25 | ECUV1H470JCV | 47P | | 1 |
| C26 | ECUV1H080DCV | 8P | | 1 |
| C27 | ECUV1H104ZFV | 0.1 | S | 1 |
| C28 | PQCUV1C334ZF | 0.33 | | 1 |
| C31 | PQCUV1C334ZF | 0.33 | | 1 |
| C32 | PSCEV0JA220 | 22 | | 1 |
| C33 | PQCUV1E104MD | 0.1 | | 1 |
| C34,35 | PSCEV0JA470 | 47 | | 2 |
| C36 | PSCEV1HA100 | 10 | | 1 |
| C37 | PSCEV0JA220 | 22 | | 1 |
| C39 | PSCEV0JA471 | 470 | | 1 |
| C40 | PQCUV1H102J | 0.001 | S | 1 |
| C41 | PQCUV1H683KB | 0.068 | | 1 |
| C42 | PSCEV1HA010 | 1 | | 1 |
| C43 | PQCUV1E473MD | 0.047 | S | 1 |
| C61 | PSCEV0JA102 | 1000 | | 1 |
| C62 | PQCUV1E104MD | 0.1 | | 1 |
| C63 | PSCEV1HA100 | 10 | | 1 |
| C71,72 | PQCUV1E473MD | 0.047 | S | 2 |
| C73 | PSCEV1EA4R7 | 4.7 | | 1 |
| C74 | PQCUV1E104MD | 0.1 | S | 1 |
| C78,79 | ECUV1E102JCV | 0.001 | | 2 |
| C80 | PSCEV1HA010 | 1 | | 1 |
| C82,83 | PSCEV0JA101 | 100 | | 2 |
| C84 | PSCEV0JA220 | 22 | | 1 |
| C85 | PSCEV1HAR33 | 0.33 | | 1 |
| C88 | PSCEV1HA100 | 10 | | 1 |
| C89 | PSCEV0JA220 | 22 | | 1 |
| C106,107 | PSCEV0JA101 | 100 | | 2 |
| C108 | ECUV1H471JCV | 470P | | 1 |
| C111 | ECUV1H104ZFV | 0.1 | S | 1 |
| C115 | ECUV1H104ZFV | 0.1 | S | 1 |
| C117,118 | ECUV1H104ZFV | 0.1 | S | 2 |
| C119 | ECUV1H104ZFV | 0.1 | S | 1 |
| C120 | PSCEV0JA470 | 47 | | 1 |
| C121 | PQCUV1C474ZF | 0.47 | | 1 |
| C122 | ECUV1H151JCV | 150P | | 1 |
| | | (JACKS) | | |
| JK1 | PSJJ1T011Z | JACK | | 1 |
| JK2 | PSJJ1T012Z | JACK | | 1 |
| | | (COIL) | | |
| L1,2 | PQLQR1LT | COIL | | 2 |
| L5,6 | PQLQR1RM601 | COIL | | 2 |
| L9 | PQLQR1LT | COIL | | 1 |

| Ref. No. | Part No. | Part Name & Description | Pcs |
|---|---|---|---|
| | | (RERSISTORS) | |
| JP3 | PQ4R18XJ000 | 0 | 1 |
| JP5 | PQ4R18XJ000 | 0 | 1 |
| JP7 | PQ4R18XJ000 | 0 | 1 |
| JP14,15 | ERJ3GEY0R00 | 0 | 2 |
| JP16 | PQ4R18XJ000 | 0 | 1 |
| J17 | ERJ3GEY0R00 | 0 | 1 |
| L7,8 | PQ4R10XJ000 | 0 | 2 |
| L10-17 | ERJ3GEY0R00 | 0 | 8 |
| R1,2,3 | ERJ3GEYJ472 | 4.7K | 3 |
| R4 | ERJ3GEYJ330 | 33 | 1 |
| R5 | ERJ3GEYJ471 | 470 | 1 |
| R6 | ERJ3GEYJ472 | 4.7K | 1 |
| R7 | ERJ3GEYJ330 | 33 | 1 |
| R8,9 | ERJ3GEYJ472 | 4.7K | 2 |
| R10-13 | ERJ3GEYJ472 | 4.7K | 4 |
| R14 | ERJ3GEYJ122 | 1.2K | 1 |
| R15 | ERJ3GEYJ682 | 6.8K | 1 |
| R16 | ERJ3GEYJ820 | 82 | 1 |
| R17 | ERJ3GEYJ221 | 220 | 1 |
| R18 | ERJ3GEYJ820 | 82 | 1 |
| R19 | ERJ3GEYJ221 | 220 | 1 |
| R20 | ERJ3GEYJ820 | 82 | 1 |
| R21 | ERJ3GEYJ221 | 220 | 1 |
| R22 | ERJ3GEYJ820 | 82 | 1 |
| R23,24 | ERJ3GEYJ221 | 220 | 2 |
| R25 | ERJ3GEYJ820 | 82 | 1 |
| R26 | PQ4R18XJ100 | 10 | 1 |
| R27 | ERJ3GEYJ102 | 1K | 1 |
| R28 | ERJ3GEYJ105 | 1M | 1 |
| R29 | ERJ3GEYJ561 | 560 | 1 |
| R30 | ERJ3GEYJ151 | 150 | 1 |
| R31 | ERJ3GEYJ103 | 10K | 1 |
| R32 | ERJ3EKF9102 | 91K | 1 |
| R34 | ERJ3GEYJ105 | 1M | 1 |
| R35 | ERJ3GEYJ822 | 8.2K | 1 |
| R36 | ERJ3GEYJ222 | 2.2K | 1 |
| R38 | ERJ3GEYJ222 | 2.2K | 1 |
| R39 | ERJ3GEYJ224 | 220K | 1 |
| R40 | ERJ3GEYJ222 | 2.2K | 1 |
| R41 | ERJ3GEYJ472 | 4.7K | 1 |
| R42 | ERJ3GEYJ103 | 10K | 1 |
| R43 | ERJ3GEYJ102 | 1K | 1 |
| R44 | ERJ3GEYJ183 | 18K | 1 |
| R45 | ERJ3GEYJ103 | 10K | 1 |
| R46 | ERJ3GEYJ392 | 3.9K | 1 |
| R56 | PQ4R18XJ390 | 39 | 1 |
| R57 | ERJ3GEYJ563 | 56K | 1 |
| R58 | ERJ3GEYJ564 | 560K | 1 |
| R59 | ERJ3GEYJ332 | 3.3K | 1 |
| R60 | ERJ3GEYJ151 | 150 | 1 |
| R67,68 | ERJ3GEYJ222 | 2.2K | 2 |
| R69 | PQ4R18XJ3R3 | 3.3 | 1 |
| R83 | ERJ3GEYJ104 | 100K | 1 |
| R84,85,86 | ERJ3GEYJ103 | 10K | 3 |
| R87 | ERJ3GEYJ104 | 100K | 1 |
| R88 | ERJ3GEYJ333 | 33K | 1 |
| R89 | ERJ3GEYJ223 | 22K | 1 |
| R90 | ERJ3GEYJ183 | 18K | 1 |
| R91 | ERJ3GEYJ103 | 10K | 1 |
| R92 | ERJ3GEYJ105 | 1M | 1 |
| R93-99 | ERJ3GEYJ223 | 22K | 7 |
| R100 | ERJ3GEYJ223 | 22K | 1 |
| R101,102 | ERJ3GEYJ472 | 4.7K | 2 |
| R103 | ERJ3GEYJ104 | 100K | 1 |
| R104,105 | ERJ3GEYJ472 | 4.7K | 2 |
| R106 | ERJ3GEYJ154 | 150K | 1 |
| R107 | ERJ3GEYJ104 | 100K | 1 |
| R108 | ERJ3GEYJ563 | 56K | 1 |
| R109 | ERJ3GEYJ123 | 12K | 1 |

**This replacement parts list is for KX-T7433C/T7433C-B only.** Refer to the simplified manual (cover) for other areas.

| Ref. No. | Part No. | Part Name & Description | Pcs |
|---|---|---|---|
| R110 | ERJ3GEYJ223 | 22K | 1 |
| R113 | ERJ3GEYJ680 | 68 | 1 |
| R114 | ERJ3GEYJ102 | 1K | 1 |
| R116 | ERJ3GEY0R00 | 0 | 1 |
| R117,118 | ERJ3GEYJ473 | 47K | 2 |
| R119 | ERJ3GEY0R00 | 0 | 1 |
| R120 | ERJ3GEY0R00 | 0 | 1 |
| R121 | ERJ3GEYJ101 | 100 | 1 |
| R123-126 | ERJ3GEYJ223 | 22K | 4 |
| R127,128 | ERJ3GEYJ102 | 1K | 2 |
| R129 | ERJ3GEYJ473 | 47K | 1 |
| R130 | ERJ3GEYJ221 | 220 | 1 |
| R131,132 | ERJ3GEYJ330 | 33 | 2 |
| R133 | PQ4R18XJ100 | 10 | 1 |
| R134,135 | ERJ3GEYJ330 | 33 | 2 |
| R136 | ERJ3GEY0R00 | 0 | 1 |
| R138 | ERJ3GEYJ104 | 100K | 1 |
| R139 | ERJ3GEYJ103 | 10K | 1 |
| R140 | ERJ3GEYJ103 | 10K | 1 |
| R141 | ERJ3GEYJ271 | 270 | 1 |
| R144-153 | ERJ3GEYJ330 | 33 | 10 |
| R160 | ERJ3GEYJ104 | 100K | 1 |
| | | (TRANSFORMER) | |
| T1 | PSLT9Z4A | TRANSFORMER | 1 |
| | | (CRYSTAL OSCILLATORS & CERAMIC FILTER) | |
| X1 | PSVCCR1638B7 | CRYSTAL OSCILLATOR | 1 |
| X2 | PSVCCR1228B7 | CRYSTAL OSCILLATOR | 1 |
| X3 | PQVBTCS4.00M | CERAMIC FILTER | 1 |
| | | LCD BOARD PARTS | |
| **PCB2** | **PSWP2T7533G** | **LCD BOARD ASS'Y (RTL)** | **1** |
| | | (ICs) | |
| IC201 | PQVILC7931D | IC | 1 |
| IC202 | PSVI44780B24 | IC | 1 |
| | | (DIODE) | |
| D201 | PSVD111R820R | LED S | 1 |
| | | (CONNECTOR) | |
| CN201 | PSJS36A61Z | CONNECTOR, 36P | 1 |
| | | (CAPACITORS) | |
| C200 | PQCUV1E104MD | 0.1 S | 1 |
| | | (RESISTORS) | |
| R201-205 | PQ4R10XJ222 | 2.2K | 5 |
| R206 | PQ4R10XJ104 | 100K | 1 |
| | | (OTHERS) | |
| E1 | EDD104U32AAG | LIQUID CRYSTAL DISPLAY | 1 |
| E2 | PSSE1011Z | CONNECTOR | 2 |
| E3 | PSHR1132Z | GUIDE | 1 |

| Ref. No. | Part No. | Part Name & Description | Pcs |
|---|---|---|---|
| | | SWITCH BOARD PARTS | |
| **PCB3** | **PSWP3T7431C** | **SWITCH BOARD ASS'Y (RTL)** | **1** |
| | | (SWITCH) | |
| SW301 | PSSRCA101Z | SWITCH | 1 |
| | | (CONNECTOR) | |
| CN301 | PSJS03Q36Z | CONNECTOR, 3P | 1 |